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CLINICS.

Clinical Lectures.

ON COLOUR BLINDNESS.

A CLINICAL LECTURE DELIVERED AT THE JEFFERSON MEDICAL COLLEGE.

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GENTLEMEN: The serious optical defect which I shall describe to you to-day has recently evoked a discussion throughout the civilized world, which has gone far beyond the limits of our profession, has excited the attention of the public everywhere, and has produced an agitation which has led to important legislation in Europe and America, and will not cease until, by the aid of experts in our profession, codes and laws have been enforced to permit ships to sail our rivers and cross our oceans without fear of collisions; and trains on our railways to rush over our land, by day or night, under the protection of wise, scientific regulations for the avoidance of preventable accidents.

The ships of all nations are compelled by law to expose, on the port side, a red light, and on the starboard a green light, from sunset to sunrise, to indicate beyond doubt the course of the ship. No other colours can be used, and these are the ones most likely to be confounded by those colour blind, so that accidents must have been, and will again be, caused by the mistake of one ship manœuvring to avoid a collision with the other under the idea that it was receding when it was approaching, the result being to bring them into contact. The law compels all steam vessels to avoid the sailing craft, and makes the former liable in damages for all losses; and I have been informed by a prominent lawyer in Baltimore, who is counsel for several steamship companies, that he is satisfied that many cases in which he has defended his companies for injuries done to sailing vessels in Chesapeake Bay, could be accounted for in no other way than by supposing that the look-out on one or other boat was colour-blind.

In the railway service the most important orders are transmitted by colours, and the safety of an entire train depends upon whether these instructions are recognized and obeyed at once. A white light, flag, banner,

or other object, indicates *safety*, and is a permission to the engineer to proceed with speed. A green colour indicates *caution*, and directs him to be on guard, and to run slowly, and to be notified that there is danger; whilst a red signal orders him to stop at once. Where the "block signal" system is in use the road is divided into short sections by stations with telegraphic operators, and each section is protected by the red signal, which bars that section so long as a train is passing between that and the one next to it; when the second station is passed, the operator telegraphs back to the first one, the white signal is displayed, and the next train can proceed. This seems the only way to avoid those collisions that yet occur on the double track roads when trains are passing in the same direction. The last serious accident of this kind, in which thirty people lost their lives, occurred by the over-crowding of the rear platform of a car at the end of a train, held at a block station, so that the danger signal of red lights could not be seen by the engineer of an advancing train just leaving a depot. Whilst these signals are used, the engineers are willing to obey the stern demands of the public that they shall be hurried over the roads at the greatest speed, and with the least loss of time. All these precautions are rendered unavailing if an engineer, knowing of no imperfection himself, has the defect called colour blindness, and is hence unable to understand the sentiment conveyed by the colour, and confuses hopelessly the perhaps soiled white or gray of safety with the precautionary green, or the green of danger, with the peremptory halt of the red colour.

Three monographs have been published on this affection—one by Prof. Wilson, of Edinburgh, in 1855, now out of print; another by Prof. Holmgren, of Sweden, on "Colour Blindness, and its Relations to Railways and Marine," partly translated by our Smithsonian Institution; and a third, the most complete, by Dr. B. Joy Jeffries, of Boston, in 1880, on "Colour Blindness; its Dangers and its Detection." And to the latter I would refer those who desire to acquaint themselves minutely with all that is known historically and scientifically of this now important subject. To the energy and the wise and well-directed labours of Dr. Jeffries we owe all of the efforts that are now being made to influence the General Government at Washington, the Legislatures of States, and the Managements of our great steamship and railway companies to perfect and insist upon the examinations of all persons who are placed in positions where the safety of life and property may be endangered by a defect in the colour perception.

To his Majesty the King of Sweden belongs the credit of having promptly shown his practical good sense in adopting and applying in his country the proposals and methods submitted by Prof. Holmgren, and his example has been followed by the most important continental nations. No action has been taken by the English Government, but under the advice of scientists most of the important railways have instituted examinations for themselves. Here, the Army, the Navy, and the Marine Hospital service have taken independent action, but have not, as yet, adopted any general standard. All recruits for the army are now examined for colour blindness, and although this is not a cause for rejection, those found defective are disqualified for service in the signal corps. The cadets at West Point are also examined previous to their admission. The Surgeon-General of the Navy has ordered examinations by the medical officers of all persons in the navy; and in the merchant marine, all persons applying for a license as pilot must submit a certificate from a physician that the colour perception is good. This is a step in the right

direction, but Dr. Jeffries has been urging Congress, aided by petitions signed by prominent ophthalmic surgeons and other scientific gentlemen, to aid in calling, in conjunction with foreign governments, an interntional congress, to which should be referred the task of establishing international standards of visual acuteness and colour perception. These advances are in response to the action of the ophthalmic section of the British Medical Association, which has passed resolutions, and forwarded them to the British Government, and to the International Ophthalmological Congress which recently met at Milan. It is to be hoped that our government may take favourable action this winter, and appoint persons to represent our interests at that congress.

You may well ask me now, What is colour blindness? It means that, with the most perfect sharpness of sight for "form," a person may be unable to distinguish between two colours as pronounced as bright red and pure green; to whom the crimson cherries on a tree, although perfectly recognized, would have the same colour as the green leaves. Remember, there is no blindness proper—all coloured objects are seen; but these colours are not recognized as the normal-eyed persons see them. The colour-blind see yellow and blue or violet with normal perception perhaps, but are unable to see any violent contrast between green and red, and would, perhaps, match a red with a green colour. I speak, now, of what we call, practically, colour blindness, since I must say that more scientifically it means one class who are green-red colour-blind, and so numerous as to number four in every hundred men; and a second class, viz., violet-yellow blind, so rare as to be seldom observed; so that hereafter we will be understood when we speak of men colour-blind, to include those who see only yellow and blue, but have the green and red tints undistinguishable. It must also be remembered that the colour-blind are often ignorant of the defect, that they see coloured objects, and distinguish them by the same names that others not colour-blind do, and that their defect cannot be ascertained by asking them to give names for colours, but that all our tests, therefore, are now based upon their inability to select colours to match those that are submitted as tests. Dr. Jeffries sums up this subject by stating that "the colour sense of colour-blind may be described as follows: The red-blind sees all objects of this colour of a darker hue than they are. The same of the green-blind as to green. Both confound these colours with each other and gray. A mixture of white and black in proper proportions to represent the luminosity of any shade of red or green will give the colour-blind the same sensation as that shade. The violet-yellow-blind will do the same in reference to all colours containing either of these two. Violet blindness is so extremely rare, and not causing danger on land or sea, we may omit special discussion of it."

Imagine, now, a beam of white light decomposed by a prism into the spectrum, and projected on a screen; where the normal eye would perceive the violet, indigo, blue, green, yellow, orange, and red, in all their purity and beauty, the colour-blind see it where the violet, and blue, and the yellow colours exist; the green is light-gray, and the orange and red are gray and brown, and hence all objects which reflect green and red are to them nearly alike in tint or colour.

The theoretical discussion of this defect would lead us too far, and would involve many theories of physiological and mathematical laws of light, which can be found in the book of Dr. Jeffries. But I will only say, that we believe that this defect is due to a congenital want in the retina of those

minute nervous elements which are stimulated, and which respond to those vibrations of light which we call red and green.

It may interest you to know that we are all in a measure colour-blind, inasmuch as our retinæ are so constructed that we have the full colour perception only at the fovea, or yellow spot, where the acuteness of vision also is the highest. We all know that without moving the eyeball we have but a small portion of the field of vision where we can perceive small objects. In reading a line of print we are obliged to move the ball so as to bring one word after the other into view, and are unable to grasp more than a small area with perfect fixation. When we experiment with coloured objects we find that the colour sense diminishes from the centre to the periphery of the field of vision in the same way that the colours of the spectrum are arranged. All the colours are seen in the small central point of view, but as we move a coloured object away from this point, without altering the point of view of the eye, the red colour is lost first, then the green, and, finally, the blue. The retina then consists of zones of different power of colour perception in the normal eye, and we are thus able to convince ourselves, by placing a vivid red a short distance from the point of fixation, that it is soon devoid of its intense colour and becomes a dusty brown; green can be recognized as a tint still further, and blue can be seen at the periphery of the field.

Is this defect frequently observed? The reports of the testing of thousands and thousands of men leave no doubt whatever that one man in every twenty-five is colour-blind as to red and green. These statistics include men of all ages—the old, and the young in schools. Dr. Jeffries alone has reported 18,000 examinations, and the percentage is always found to be a little over 4 per cent.

Its cause is congenital, frequently inherited, and is, so far as we now know, entirely incurable. Acquired colour-blindness is known to be one of the signs of inflammation of the optic nerve, ending in atrophy and blindness, and is also produced by the abuse of tobacco and alcohol, or may follow injuries affecting the head or eyes, disease of the brain, or long-continued illness, such as typhoid fever.

The most curious and unintelligible aspect of this strange defect is its rarity in the female sex, since but 1 woman in nearly 4000 was found completely colour-blind as reported in the statistics of Dr. Jeffries, against 1 man in 25.

Accept this fact, that 1 male in every 25 is born colour-blind, and is incurable, and you will realize how important it is that all males in our schools should be carefully examined before selecting any of the various trades or pursuits in which a full colour sense would be necessary for success. It is to insure safety to the growing numbers of travellers by land and water, however, that I urge upon you an acquaintance with the facts in regard to this defect, and its detection, which has now been rendered very simple.

Since the colour-blind see tints and learn to give them the names we all use, it is simply impossible to detect the colour defect by showing colours and asking them to name them. The test now accepted as the most prompt and practical is the one which Prof. Holmgren has introduced, and which is based upon the power of the normal eyes, to select from many colours offered them those to match some given test colour.

The apparatus needed then is a collection of skeins of ordinary worsted, about one hundred and fifty in number, including shades of every colour

from white, through the tints of the spectrum to black; and three large test skeins: I. of pure green, light in tint; II. of rose or purple, a mixture of red and blue; and III. of pure red. This selection has been well revised, and can be obtained from the dealers in optical apparatus. These colours mingled together, placed on a white cloth in a good light by daytime (since no examination can be made by the yellow flame of a lamp, candle, or gas-burner) should be exposed to the view of the person examined, and he should be told to select any tints which would resemble the test skein No. I. light green, which should be placed by itself at a short distance away. The selection should be continued until a number of skeins have been chosen and thrown aside, and if only green are taken we may proceed to the next test. Where colour-blindness exists skeins of light or darker gray, light brown, or even red may be selected with test I.

Test II. is a rose or purple, and, as it is composed of red and blue, the red blind see it only as blue, and match the rose with blues, whilst the green blind select greens.

Test III., the pure red skein may then be used, and these colour-blind will select from the mass of worsteds the browns, sages, or greens, and thus betray their defect, not only by their failure to match, but by the fact that they overlook and put aside or reject colours which do match. The tints which the colour-blind select to match the large test skeins are called "colours of confusion," and they become well known to the surgeon who makes much use of this method.

Briefly, those who, with the *green* test, select grays, light browns, tan-colours, or light reds or pinks are colour-blind; but we desire to know whether they are to be classed as red or green blind, and for this purpose we notice the shades selected for the *rose* test; those who select blue and violet tints are completely *red blind;* those who select gray and green tints or any of them are completely *green blind.*

Finally, to convince any who doubt, although it is not even necessary to decide if the defect be red or green blindness, test III., the *red*, is presented, a vivid colour, like the flags used on the railways, and the examination should continue until all the tints of this colour, or a number of "confusion colours," have been placed aside; the red blind will choose, beside red, green and brown shades, which seem to the normal sense *darker* than red; on the contrary, the green blind will select opposite shades, which seem lighter than red.

Although we may classify the colour-blind into red and green blind, yet practically they both show an inability to distinguish between these, the two colours which after long experience have been selected for the important signals on land and sea; and no one can witness the examination of a person colour-blind for the first time without a deep conviction of the danger that would be incurred by leaving the safety of a ship or train to a person so unfortunately defective.

Observe now the movements of this patient when directed to look at the test I., or light green, placed three feet away, and to match the colour from the confused mass of coloured skeins placed before him on the table. He turns over the tints, looks again and again at the test, selects slowly a green, which I silently place on one side; he again with a curious movement of his hands, which betrays his defect, pushing aside the greens, which we all recognize in the worsteds, and failing to pick them out, he chooses this gray skein—now this tan colour—now another green—now a gray—now a darker tan; so we now present you his selection, which may

well cause you surprise. Let us now ask him to match test II., this purple skein, and you perceive he selects now more promptly either purple, since they look the same, or these blues, for the man is red blind and cannot see the red colour in the mixture of red and blue which makes the purple of our test skein. Had he been more green- than red-blind he would have picked out some green and gray tints to match the purple. No one can doubt his inability to understand what we mean by colours. But we will finish by asking him to match this bright red test, No. III., and you see he selects about half his skeins of red, and the rest of dark brown.

There are perhaps ten other and more complicated methods for diagnosis of colour defect, but that of Holmgren is universally regarded as the most simple, and as giving prompt and decisive results, and for this reason I will not detain you by their descriptions.

Having been requested to aid the Pennsylvania Railway in having their employés examined, I have been compelled to devise an instrument, based on Holmgren's system, which would enable the test to be applied without the presence of any medical man, and the facts of the matching to be recorded for future reference. This became necessary from the fact that it has been found requisite to ascertain not only the colour sense, but the acuteness and range of vision, the field of vision, and the hearing, of all the employés; and as these numbered about thirty-five thousand, scattered over twenty-five hundred miles of road, and as there were not available a sufficient number of ophthalmic surgeons to make the examinations and to decide judicially and finally, therefore some other means were necessary to collect all the information, and bring it before the person who would take the responsibility of deciding upon the fitness or unfitness of the employés. A general system has been perfected and has been used for over two thousand examinations, which has fulfilled the above indications, and will soon be put in force over the entire road, by which, upon a blank, all the facts requisite for a decision can be placed by any intelligent non-medical person.

For the colour perception I have used an instrument composed of two narrow, flat sticks hinged together at one end, and fastened by a catch at the other, between which are forty buttons attached to one stick, but capable of easy removal or transportation, and each one numbered from 1 to 40, the numbers being concealed by the second stick. To each button is attached a skein of worsted arranged on the following theory: Experience has taught me the "confusion colours" for the three *test* colours, viz., green, rose, and red; and I have used in my arrangement only the real colours like the *tests*, and the "confusion colours," omitting all the others and reducing the number from 150 to 40. The first twenty buttons have attached on the odd numbers various tints and shades of green, and on the even numbers the known "confusion colours," grays, tans, light browns, etc.; and this half is for the diagnosis of colour blindness. The second series, from 21 to 30 have the rose or purples on the odd numbers, and blues on the even; and the third from 31 to 40 have alternately reds and the proper confusion colours for red, viz., browns, sages, and dark olives.

A man is now placed before this instrument and told to select ten tints to match the *green* test, and if he has colour sense perfect, he promptly turns up over the stick the ten green skeins; a clerk then examines the numbers on the ten buttons, and he will find and record on a blank only odd numbers; the second, *purple*, test is then similarly treated, and next the *red*, and if no defect is found nothing but odd numbers are recorded. When

colour-blindness is found the confusion colours, with all the tests, are on the even numbers on the buttons, and a glance at the record enables an absent supervising officer to know that the man must be colour-blind, and to verify the examination by referring to a similar instrument in his own possession.

It would be a fault if an examination should show with Test I. even numbers between 1 and 20, or any number beyond 20, for a colour-blind might select a red between 30 and 40, to match the green test; with purple test anything recorded between 20 and 30, except odd numbers, or any number below 20, or beyond 30, would indicate colour defect, and in like manner anything but odd numbers between 31 and 40 for the red test, would proclaim the defect. No great skill, and no professional knowledge is needed to make this record, and the theory of the arrangement is so simple that a glance enables one to know, from the written report of the examination, the exact colours that were selected, and to decide if they were indicative of colour blindness. I have been compelled to use this plan, or give up the hope of having these examinations made on our large railways, and that it has been entirely successful in the hands of several different examiners, whose reports have all been carefully scrutinized, is known by the fact that over four per cent. of the men have been found colour-blind, although the instrument was then less complete than it is at present, thus giving the percentage to be expected from the labours of other careful and professional observers. Many of these men were also tried by the banners and flags by daylight, and by coloured lamps by night, such as are daily and nightly in use on the road, and they made the mistakes that would be predicted from their test examinations, being unable to distinguish at once and infallibly between the soiled white (gray) flag and the green, or between the green flags and lights and the red ones.

We may conclude by the brief statement that one male in twenty-five is colour-blind, and perhaps does not even suspect it; that it is largely hereditary and congenital, and when so incurable, but may be caused by injuries, illness, or abuse of alcohol and tobacco; that he cannot correctly see the signals when dependent on colours; which experience has shown must be employed on the water and on railways, and that he is necessarily incapable of service on railways or on shipboard where his defect might lead without any doubt to the most serious disasters. The methods of examination have been rendered easy and sure, and it remains for us as protectors of the public health and safety, to do all in our power to aid the management of our railways and ships to eliminate this danger from the risks of travel.

PART OF A CLINICAL LECTURE ON AUDITORY VERTIGO.

Delivered at the National Hospital for the Epileptic and Paralyzed.

By J. HUGHLINGS JACKSON, M.D., F.R.S., etc.
Physician to the Hospital.

GENTLEMEN: We are occasionally consulted by patients for attacks of vertigo. Sometimes the attack is epileptic, and then the case is infinitely serious; sometimes, at least many think so, it is owing to dyspepsia only, and then it is a thing of comparatively little gravity. Vertigo occurs occasionally as a result of

sexual excesses. Some weakly people are giddy and totter if they get up quickly from the recumbent position, but here the attack, if we may call it one, is artificially produced. There is another kind of vertigo which has long been known, but which is not yet widely known—auditory vertigo, or as it is often called, Ménière's disease. It is quite certain that paroxysms of exceedingly severe vertigo occur with ear disease. No experienced person can deny that, even if he denies that there is a relation of cause and effect. Whilst auditory vertigo is the most distressing to the patient, epileptic vertigo is infinitely the most serious of all paroxysms of vertigo. Epileptic vertigo, I must tell you, is often used as a name for a very slight attack of epilepsy—for cases in which there is no true vertigo. I think it would be better to use it as a name for vertigo in slight epileptic paroxysms, or at the onset of severe ones. Thus, if a patient has, in a slight paroxysm of epilepsy, or at the onset of a severe one, the sensation of external objects moving, or of himself moving, I call that sensation epileptic vertigo. I do not call a very slight attack of epilepsy epileptic vertigo if there be neither of these sensations. In no case, indeed, do I conclude that a patient has vertigo unless I learn from him that objects appear to him to move, or that he feels to move.

The diagnosis of the nature of an attack of vertigo is not always easy. We ought to investigate the simpler cases first. There is a very important vertigo we have yet to mention; one, however, which does not come on in attacks; it comes on when the patient walks. I mean vertigo from paralysis of an ocular muscle, or of several ocular muscles. To study vertigo in cases of paralysis of ocular muscles is the most methodical way of beginning the study of vertigoes in general. I think it is unwise to study auditory vertigo and epileptic vertigo before carefully investigating the much simpler case of vertigo from paralysis of ocular muscles.

Our subject to-day is auditory vertigo.[1] The term does not suggest the whole symptomatology of the affection it names, there is much more than giddiness with ear disease in a severe attack. The patient consults you for attacks of giddiness with vomiting, but the symptomatology is usually very much wider than this even. He will tell you that suddenly things seem to move—to move to one side, or to whirl round, or that he himself feels lifted up or pushed forwards. He is unsteady, and his gait is a reel, if walking be possible at all. Even when lying down he feels unsafe, and will grasp the sides of the couch. If he moves his head he is worse. The above vertigo, with reeling, is only one-half of the patient's condition. We may call the two symptoms we have mentioned locomotor symptoms. Vertigo is on the physical side incipient or rudimentary disorder of locomotion. The following additional symptoms we may call "vital." We see that the patient is pale and haggard, that there is profuse perspiration. He tells us that he feels sick, and he may vomit. He has horrible depression, he may say that he feels as if he were going to die. and not unfrequently compares his condition to that in sea-sickness. Another symptom is pain in the head.

The paroxysm may last an hour or more. I have described what occurs in a severe attack; there are minor attacks, such as a little transitory giddiness and unsteadiness. There are also still severer attacks; sometimes the patient loses consciousness. A medical man told me that the first attack occurred in the streets in London. He was taken to a hospital unconscious, and remained so for three hours. Such a seizure would give us a hard task in diagnosis from epilepsy. Subsequently he had attacks without loss of consciousness.

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[1] Brown-Séquard in his lectures, "Physiology and Pathology of the Central Nervous System," 1880, p. 195, and also in "Experimental and Clinical Researches, etc.," 1853, drew attention to the serious disturbance resulting from lesions of the uditory nerves.

In these cases there is "something wrong with the ear," or ears. Sometimes the patient has been long deaf of one ear before any attack; occasionally it happens that he is rendered deaf at his first attack; there is in other cases great noise in one ear when the paroxysm sets in, or an increase of a noise which exists betwixt the paroxysms.

In these cases the ear is the part in fault. But manifestly all the symptoms we spoke of as locomotor and vital are owing to something wrong with nervous centres. We may put it that the ear is in fault, and that the centres suffer. But this is not, I think, without qualification. Borrowing an idea from Sydney Ringer as to diminished resistance of centres in cases of migraine, I would suggest that any general lowering of health will be a factor in the production of auditory vertigo; the resistance of nervous centres being diminished, they more readily give way to the "irritations" by the ear. In another way of putting it we may say that the nervous centres are healthy in auditory vertigo, except, perhaps, for a defect in their nutrition in common with the rest of the body. They are, nevertheless, as healthy as any of the other centres, but they alone give way, they alone being worried *ab extra*. There is no reasonable doubt that the starting-point is ear disease; these particular paroxysms would not occur even in ill-health unless there were the particular defect, ear disease. I find, however, that some patients consider the diagnosis to be nonsensical. A patient may reply that he has long been deaf, and that he does not care about his ear, that he does not come to you for *that*. (Sometimes, however, he does not know himself to be deaf of one ear.) He evidently supposes you are "thinking too curiously," that you are neglecting obvious causes and explaining the ailment by far-fetched and vague theoretical reasoning. The obvious cause to him is usually stomach and liver derangement; very naturally, for he vomits and may bring up much bile. He cannot see what an old aural affection has to do with a recent sudden paroxysm of vertigo, with urgent vomiting, and great prostration. He would be better satisfied, doubtless, by being told that his attack was due to "suppressed gout," to "liver derangement," etc., for these terms are familiar to him, if the explanations given in them are not really more intelligible. Then he may tell us, in confirmation of his hypothesis, that alterative aperients put him right again, not seeing that, the affection being in its nature transitory, he must come right after a time. What Buzzard says of treatment of batches of lightning pains in tabes dorsalis applies here.[1] I don't blame the patient, although I have to combat his notions. Not many years ago I did not know that ear disease was a cause of the symptoms I have mentioned, and I do not doubt in the least that my then erroneous, but quite conscientious, explanations appeared more rational to my patients than those I give now.[2] You must not suppose that an advance in your knowledge of disease will necessarily make you more fitted to obtain your patient's confidence; it fits you to treat him better, and you must get your satisfaction out of that. If you tell a man who sees perfectly well that he has a grave condition of his optic nerves, he is often the reverse of being assured that you understand his case. The ophthalmoscopical examination which you make, simply because he has intense headache and perhaps vomiting, naturally seems to

[1] The Lancet, Feb. 14, 1880.

[2] My attention was first thoroughly drawn to the subject by a masterly paper by Knapp, Archives of Ophthalmology and Otology, vol. ii., No. 1. I gave a short *résumé* of previous opinions on this disease, *Med. Times and Gazette*, Aug. 17, 1872. Charcot has published one of the most important cases of Menière's disease. I have given an account of this in the *London Medical Journal*, April 22 and 29, 1874. A brief account of Ménière's disease is given by Ramskill, in Reynolds's System of Medicine, the first account by a physician in the country, I believe.

him quite irrelevant. If you told him that he was suffering from severe biliousness he might be satisfied. He may, indeed, reply to the expression of your opinion that he *knows* it to be "all liver," and, perhaps, may add that he was always very bilious. One great thing you wish to do is to prevent his becoming blind, but if your iodide of potassium makes him "more bilious" very likely you do not see him again. In intense headache we should always use the ophthalmoscope, and if, as very often happens, you discover nothing wrong in a patient's eyes, he evidently feels that he scores one; he *knew* there was nothing wrong with his eyes. Similarly he often *knows* that there is nothing the matter with his heart, lungs, and kidneys, although we are obliged to examine the chest and urine as a matter of routine. If you get to know that hypermetropia is an occasional cause of severe head trouble, totally incapacitating the subject of it for study, you are in error if you suppose that a correct diagnosis founded on such knowledge will always be acceptable to the patient. Very naturally when he finds that, for a time at least, he can read small type, such an explanation of his symptoms appears to him simply absurd. Many of our patients seem to wish to have a conversation on their cases on some basis (gout, liver, rheumatism, etc.), which makes them feel that they follow the doctor in his investigations, and understand his conclusion. They cannot appreciate a scientific medical investigation. If a patient "who knows something of medical matters" consults you for amaurosis (simple optic atrophy), he naturally thinks you are wandering when, after looking into his eyes, you ask about pains in his legs, and then "tap his knees." If you took his view that the lightning pains in his legs were rheumatic, and that his failure of sight was owing to rheumatism of the optic nerves or their centres, he would be more in harmony with you.

Even medical men who have aural disease very often totally reject the proffered explanation of their attacks of vertigo; many of them also ascribe the ailment to digestive troubles. A medical man had deafness of his left ear, with occasional slight vertigo. One day, walking in his garden, he had pain in his head, was very giddy, fell in some shrubs, and vomited. This was plainly ear-vertigo, as he himself knew. But he had had the following diagnoses made of his case by other medical men—(1) Nothing, (2) Nervousness, (3) Deranged stomach.

Be very careful how you interpret acute digestive symptoms. They may be effects, not causes. I imagine that in at least one in five cases of epilepsy the first paroxysm is erroneously put down to stomach derangement. Migraine, unquestionably a nervous affection, is very often similarly explained, and indeed goes under the unfortunate name of "sick headache." Besides, it is very common for cases of fatal brain disease to be explained away in their earliest stages as being caused in this simple manner. It is quite true that as we get older in practice we attach more and more importance to the state of our patient's alimentary system, for plainly our operations are often based on its condition. We always inquire nowadays about our patient's digestion and regulate his diet, whatever ailment he may have, just as we examine his urine, heart, and arteries. But for my part I attach less and less importance to abnormal states of the digestive system as direct *causes* of definite nervous symptoms. Very often there is no other warrant for the diagnosis of liver affection in cases of intense headache, of vertigo, and of transient loss of consciousness, than sickness and vomiting, with the appearance, perhaps, of bile in vomit. If any one from any cause vomits long enough and strongly enough he will bring up bile; indeed, I should take a plentiful supply of bile in the vomit as evidence that the liver was working well. Vomiting is a very general symptom. I mean that it occurs under very many different circumstances —"shock," passage of a biliary or renal calculus, tubercular meningitis, tumour

of the brain, migraine, ear disease; then there are the "gastric crises" of tabes dorsalis (Charcot). You do quite right, of course, to note the "stomach symptoms" in auditory vertigo, but you should inquire as to the state of digestion in the intervals of the attacks, when it is often quite good. When the digestion is right in the intervals the "dyspepsia" is paroxysmal, is part of the paroxysm, and no doubt depends on something wrong, not at the stomach end, but at or acting on the central end of the pneumogastric nerve. In a masterly article on "Vomiting in Connection with Cerebral Disease,"[1] Ferrier brings evidence to show that in cases of vomiting from cerebral or any other disease or morbid condition, irritation of the vagus, centrally or peripherically, is the one thing in common to all. I think it is a good piece of work to make a comparative clinical study of the paroxysmal dyspeptic symptoms of migraine, auditory vertigo, and of those in some cases of tabes dorsalis ("gastric crises" of Charcot).

There is, however, described a "stomach vertigo," and as one of the describers of it is Trousseau, we must consider this matter with great respect. If you will read what Niemeyer calls Trousseau's "life-like description" of it, you will find that he does not really make out a strong case. He says that the attacks generally come on long after digestion, that sometimes a small quantity of food prevents an attack or stops it if it has begun, that stomach vertigo does not differ greatly from auditory vertigo, that the "slightest cause" may bring it on, as a sudden movement of the head, or looking at a range of bars, a trellised wall, or a striped pattern in the hangings of a room. I will read an extract from Niemeyer's well-known work. "As above mentioned, Trousseau believes that these attacks of dizziness depend on dyspepsia; at the same time he acknowledges that in many cases the signs of dyspepsia are so slight as to be readily overlooked. He relates cases of the successful treatment of 'vertige stomacale' by the alternate administration of infusion of quassia and a composition of carbonates of the alkalies. Even from this prescription I have never seen any benefit, and while I must acknowledge that the first attacks of dizziness affecting the patients that I have seen usually occurred after an indigestion, and were accompanied by dyspeptic symptoms, still in none of them were there evident signs of indigestion during the subsequent attacks, which often continued for years. I believe the repetition of the attacks of dizziness to be due to psychical causes." Observe how cautiously Niemeyer writes "usually *occurred after* an indigestion," and "were *accompanied* by dyspeptic symptoms;" he does not say "caused by." Curiously, some people deaf of one ear do not know it until it is pointed out to them. Hence Gowers has well said: "The fact that the patient may be unconscious of a most significant auditory defect lessens the value of former observations as evidence of the definite character of stomachal vertigo."[2] I think Gowers will turn out to be right in what he has further written: "My own conviction is that, in the vast majority of the cases in which a vertigo of definite and uniform character is apparently excited by gastric disturbance, an auditory defect will be discovered on careful examination." I confess that I do not believe that a sudden and severe attack of giddiness would occur from dyspepsia, if there were not some flaw elsewhere. Of course, common sense leads us to treat dyspepsia whenever we meet with it; all would agree in this. But we must be careful lest we treat for it when it does not exist; and if there be dyspepsia, we must not neglect to care for other conditions which may not depend on the dyspepsia, or only very indirectly depend on it. I do not deny that ordinary dyspepsia, nor the dyspepsia artificially induced by over-indulgence, may be a factor. I think that dyspepsia, or any other cause of lowering of general health, is a factor in

[1] Brain, Part 6, July, 1879.

[2] Brit. Med. Jour., April 7, 1877.

producing or allowing paroxysms both of migraine and auditory vertigo. This was in principle admitted when we referred to Sydney Ringer's opinions. Gowers has put the question very clearly: "In persons the subjects of ordinary vertigo, whose equilibrium nerves and centres are damaged, a primary gastric disturbance seems sometimes to excite a paroxysm of the special vertigo to which they are liable, and the gastric disturbance which thus brings on the attack is naturally regarded as its only antecedent." An admirable observer, Dr. Russell of Birmingham, has described the case of a woman who had symptoms of gastric ulcer and paroxysm of "definite" vertigo, and no sort of ear affection; but he says that "some proclivity in one of the vaso-motor centres, or in some other part of the nervous tract involved, must be presupposed."[1]

To return to our special topic. No one need diagnose ear vertigo when there is nothing aural to get hold of. On any view, we should note the presence of ear trouble, if there be any, whether it is accepted as causative or not. This we are bound to do. If any one believes that a patient's attacks of headache are really owing to deranged digestion, he is bound to take heed of any retinal projections there may be in the paroxysms (vibrating air, fortification outline, etc.), and of the mode of their progression over the field of vision. He has to hold his hypothesis, not by ignoring these "definite" projections, but after fully considering them. Then, as Gowers points out, we have to note the kind of vertigo. To use again an expression of his, it is often "definite." Is it likely that when it is so particular that objects appear to be displaced to one side that stomach derangement is the cause of it? Is it not, on the contrary, more likely to be owing to some local lesion in the centres, even if not to disturbance of them by ear disease? And if there were no deafness, it would be rash to say there was no ear disease. I spoke also of retinal projections in some cases of migraine as being "definite." Is dyspepsia or any ailment affecting the nervous system generally likely to be the cause of a migraine with projections creeping over the field from one side towards the other? I entreat of you to inquire into the state of the ear in all cases of paroxysmal vertigo. I am ashamed to confess that I nearly made a very great diagnostic blunder recently by neglecting what I am now urging on you. Of course, you must not put down all paroxysmal affections, even starting with giddiness, as a matter of course to aural affection, even when there is such affection. Some attacks of epilepsy begin by noise in one ear;[2] in some cases of epilepsy and of epileptiform seizures there is organic ear disease, and probably a causative relation. These two kinds of cases differ *toto cœlo* from one another, and each also from cases of Ménière's disease.

I will now recapitulate and also adduce further evidence showing the relation betwixt ear disease and paroxysm, in which there is vertigo with vital symptoms, or in which there is ear disease with a slight and transient vertigo which is often definite. (1) There often is ear disease in the severest cases of vertigo. (2) Often the patient becomes deaf at his first seizure, and remains so afterwards. (3) When deaf of one ear (either before or after his first attack), suddenly turning the head in one direction may make him slightly giddy. (*a*) Thus one of my patients whose ear disease was right was a little giddy when he turned over to the left in bed. He had severe paroxysms also. (*b*) A medical man, whose ear

[1] Med. Times and Gazette, March 8, 1879.

[2] I have published two cases of this kind without autopsy in *The Lancet* of March 11, 1876, p. 386. Recently I have, as Gowers mentions in his second Gulstonian Lecture (*The Lancet*, March 20, 1880, p. 435), had an autopsy in a case of epilepsy, or epileptiform convulsions, in which noise in one ear was the "aura." Gowers examined the specimen for me, and found tumours in the opposite side of the brain.

disease is right, tells me in a letter, "The third attack was brought on by a sudden turn from right to left when lying in bed, when the giddiness and confusion lasted for eight or ten days. I have still difficulty in lying on the left side, and could still make myself giddy by turning quickly from right to left when lying. I can turn quite well any way when in the upright position. Auscultating with the right ear a patient lying in bed, the throwing the head to the right is apt to make me a little giddy, this does not occur when the head is thrown to the left." (*c*) Buzzard reports of a patient *subject to paroxysms of auditory* vertigo:[1] "The patient, deaf of the left ear and with noise in it, kept his bed three or four months, unable to turn his head to the left." These facts are, I believe, to be trusted. I must say, however, that the statements of patients as to side of body turned to or side affected in paroxysms of any kind are not to be confidently relied upon. (4) Some patients deaf and subject to attacks may make themselves a little giddy by pressure on the ear. Schwabach reports a case of discharge from the left ear, in which pressure above and below the left auricle caused the eyes to oscillate horizontally to the left side, and slightly downwards—that is to say, the pressure produced a physical condition for vertigo; moreover, the patient felt giddy. I take the following from a paper by Maas:[2] "Of late E. Pflüger observed a case of formation of polypi on the posterior wall of the external auditory canal, close to the membrana tympani. When the polypi were touched with a probe, oscillatory movements in the horizontal direction ensued in both eyeballs." Flourens and other physiologists give oscillation of the eyeballs as one result of experimental injury of the semicircular canals. (5) Syringing the ear in some patients with aural disease produces an attack of auditory vertigo. Every medical man has seen patients thus treated ghastly pale, and reeling. In Schwabach's patient the oscillatory movements of the eyes were repeated in a lesser degree on syringing the ear. (6) Some foreign bodies in the ear produce great misery. I do not know, however, that they produce paroxysms like those of Ménière's disease. You are aware that the pneumogastric nerve sends a branch to the membrana tympani—some say to enable us to hear the dinner-bell. The membrana tympani receives branches from the fifth also. Possibly irritation of the pneumogastric branch is in great measure to blame for such symptoms as occurred in the following case. The case is of some interest; possibly it is a very common one in aural practice. For the notes of it I am indebted to Mr. Lewis Mackenzie, formerly house-physician at the London Hospital:—

About 12.30 P. M. on Dec. 30, 1872, John D., aged twenty-two, a strong-built soldier, came into the receiving-room of this hospital in a state of great mental excitement. His face was much congested, the conjunctivæ were suffused, and for the moment it seemed as if he were the subject of a delirium from drink. He was complaining in an excited manner of a "buzzing" in the right ear, and of intense pain, the character of which he could not describe. He frequently repeated that "he would go mad if not relieved." His head rested with his right ear on the palm of his right hand, and it was noticed that he frequently walked round and round, and always from right to left. The house-surgeon had some difficulty in getting him to be quiet, and explain his sufferings. When asked how long he had had the pain, he said since he got out of bed in the morning; in fact he awoke in great pain, "The pain woke me, but has got worse and worse." Whilst I was deliberating as to the diagnosis, the patient said, "It feels like a large insect in my ear." This leading observation at once suggested

[1] Clinical Society, *The Lancet*, March 4, 1876.

[2] Archives of Ophthalmology and Otology, vol. vii. p. 493.

an examination of the ear. Nothing was seen by ordinary examination, but with an ear speculum and reflected light from a mirror all the tissures appeared healthy, but on more close examination a small black dot was seen at the anterior wall of the tympanum and its junction with the mucous membrane of the external ear, and moving about as if trying to scratch its way betwixt the membrana tympani and the wall of the meatus. One syringeful of water brought out the offender, which proved to be a louse of rather large size, and dark. The patient was *at once relieved*, though his ear still felt "queer." He left the hospital in a state of intense gratitude.

(7) There are the well-known experiments of Flourens on the semicircular canals, narrated in every text-book of physiology. (8) There are the recent inestimable experiments of Cyon, carrying us a long way further than those of Flourens. (9) There are the researches of Mach and Crum Brown into the functions of the semicircular canals; these researches are of great value; by showing the particular importance of these canals in health they indirectly enforce the opinion that diseases of them may produce definite locomotor symptoms; they are also most valuable contributions to the physiology of the nervous system.

My chief subject is the paroxysm, but there are "chronic" cases. I speak of these to enforce that vertigo and reeling may have a causative relation with ear disease, that not only do "attacks" of vertigo go with it, but that more continuous vertigo does also; in some cases there are both attacks and frequent or continuous reeling. Of course, there is another difference betwixt the two than that of acuteness and chronicity, which, however, for our present empirical purpose, does not concern us. A few persons with ear disease nearly always, or for very long periods, walk unsteadily; they have to walk with attention, and sometimes with their legs too widely apart; they feel slightly giddy; they may walk as if slightly drunk. If the deaf patient comes to you walking well, and yet complains that he frequently is unsteady, you should get him to walk a short distance with closed eyes. All sorts of bad walkings are made worse by closing the eyes, although none so much worse as the gait in locomotor ataxy. I will mention only one case of this kind. I have recorded it in *Brain*, Part 5, vol. ii., April, 1879, partly from notes by Mr. Lewis Mackenzie. It looks to me like a production of chronic vertigo and reeling by experimental injury of one ear. A medical man, after firing a heavily-loaded gun, felt giddy and stunned, and walked badly. Since he has been partly deaf of the right ear, has had noise in it, and has tended to the left side in walking; when arm in arm with some one he would pull or push his companion to the left, according to the arm hooked to. His wife had often to remind him that he walked to the left. He is never without the noise in the right ear. This case is, so to speak, the production of "half a reel" by injury of one ear.

In the case last mentioned there were no paroxysms, but, as already said, there are cases with both severe paroxysms and interparoxysmal slight symptoms. Some patients have strong paroxysms and frequent slight ones. A patient, under the care of my colleague, Dr. Buzzard, besides having strong paroxysms, has what he calls "staggerings" five or six times a day, or even in an hour. He has a feeling of sickness when they come on.

So far we have only empirical evidence of various kinds to show that there is a relation betwixt ear disease and certain nervous symptoms. That there should be is a necessary outcome of very old physiological researches on animals, and of the very recent ones of Cyon.—*Lancet*, Oct. 2, 1880.

MONTHLY ABSTRACT.

Anatomy and Physiology.

Reflex Action in the Vessels of the Eye.

By means of a series of experiments, MOOREN and RUMPF have proved (*Centralblatt für die Med. Wissenschaft.*, No. 19, 1880) that direct irritation of the iris in the rabbit causes injection of the vessels of the eye irritated, and, at the same time, anæmia of the vessels of the fellow eye. This anæmia is followed by injection when the irritation ceases. By repetition of the irritation, it is possible to produce in the fellow eye discoloration of the iris, narrowness of the pupil, and turbidity of the aqueous humour. By the use of ether, anæmia is produced in the eye subjected to its action, hyperæmia in the other; and subsequently a reversal of these conditions occurs as before. The authors conclude that the vessels of the two eyes stand in a close antagonistic relation to each other, and that alterations in the amount of vascular contraction lead readily to inflammation, exudation of white corpuscles, and stasis of lymph. They maintain that the theory which explains sympathetic ophthalmia by reflex action from the ciliary nerves of the one side to those of the other, now rests upon a real and physiological basis.—*London Med. Record*, Oct. 15, 1880.

The Contractions and Convulsions Obtained by Stimulations of the Brain.

PITRES and FRANÇOIS-FRANCK (*Travaux du Laboratoire de M. Marey*, 1880) have studied graphically the contractions resulting from the stimulation of the brain. A single electric shock produces, when sent through the motor centre, a single contraction as when the nerve is stimulated. A series of shocks (about forty-five in a second in the dog) produce a permanent contraction. Single shocks, individually too weak to produce contraction, by summation call forth a spasm. Strong stimulation of one hemisphere calls forth contraction on both sides of the body. Stronger currents are necessary to stimulate the white matter than the gray; but the time of reaction is shorter in the former. Tetanus may be obtained by rapid stimulations of the internal capsule (sixty a second), but does not show the same fusion of the individual contractions seen elsewhere.—*London Med. Record*, Oct. 15, 1880.

Galvano-Hypnotism.

Professor EULENBURG (*Wiener Klinik*, No 3, 1880) shows that in favourable subjects the supposed hypnotic effects of electricity may be due to many other causes. He describes one case, however, where the galvanic current clearly threw the patient into a hypnotic condition. She was hysterical, with left hemianæsthesia, and was subject to fits of lethargy. The left hemisphere and nerves of special sense were unexcitable by the current; a condition, however, which yielded to treatment and gave place to a galvanic hyperæsthesia. At the same time the passage of the current through the head (negative pole to neck, and bifurcated positive to mastoid processes) was noticed, if kept up for about five minutes, to produce a condition of hypnotism, into which the patient sank not gradually but quite suddenly. Consciousness was quite extinct; some of the

cerebral reflexes were much diminished; and gentle stroking of the skin, of the hand for instance, was followed with muscular rigidity of the part, gradually extending over the whole body. The usual means sufficed to arouse her, but a long time elapsed before she had recovered fully her senses. Active continuation of passively induced movements was not observed in this case.—*London Med. Record*, Oct. 15, 1880.

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The Effects of the Lightning-Stroke on the Animal Organism.

Professor NOTHNAGEL relates (Virchow's *Archiv*, May, 1880) some experiments he made on rabbits with the Leyden jar. He found that sufficiently powerful sparks produced a localized anæsthesia of transient nature. The extent of the lesion was proportional to the density of the electrical fluid, that is, to its quantity divided by the diameter of the limb. At the same time the motor fibres were temporarily paralyzed, the duration of the paralysis being about the same as that of the loss of sensation. The faradic excitability of the paralyzed nerves was diminished. The author next describes a case where a man was struck by lightning on his right hand, which became completely paralyzed and anæsthetic, and remained so for ten weeks. The recovery was sudden and rapid; in two days the hand became quite well again, and remained so for six years, when suddenly both sensation and motion disappeared from it. Three months after this occurrence, he was admitted into the hospital. He was submitted to the usual electro-therapeutic measures during a few days, but without the slightest benefit. One day, however, it occurred to Professor Nothnagel, who was then experimenting with the magnet on a case of hemianæsthesia, to apply the latter to the paralyzed hand. His astonishment was great on finding that within three-quarters of an hour sensation and motility were returning. Further applications of the magnet were followed by a complete recovery, and a few days afterwards the patient resumed his work. No transfer was observed.—*London Med. Record*, Oct. 15, 1880.

Materia Medica and Therapeutics.

Resorcin as an Antidote.

Professor LICHTHEIM, of Berne (*Correspondenzblatt für Schweizer Aerzte*, July 15), has made researches on the action of this body which indicate that we possess in it a powerful antipyretic, which in several respects is preferable, in regard to the extent and security of its action, to quinine and salicylic acid. If a dose of two or three grammes (30 to 45 grains) of resorcin be given in solution or in substance to a patient in a high state of fever, the first signs of its action show themselves after a few minutes. Giddiness and buzzing in the ears occur, the face becomes reddened, the eyes are brighter than before, the breathing is quickened, and the pulse more frequent by several beats, and generally somewhat irregular. Ten to fifteen minutes after the dose, the skin begins to become moist, perspiration becomes gradually stronger, and after fifteen minutes more the whole body is bathed in sweat. With this outbreak of sweating the symptoms of stimulation which first occur disappear; the giddiness and buzzing in the ears have usually passed off in about fifteen minutes after the taking of the medicine, and a rapid defervescence occurs at the same time with active sweating. The frequency of pulse and the temperature are quickly reduced, and within an hour after the administration of the medicine both have fallen to the normal standard. The secretion of sweat has meantime stopped; the skin of the patient is moist

and cool, and his general condition is that of an individual free from fever; the amount of difference of temperature in such cases is about three degrees centigrade (5.4 Fahr.) or more; the frequency of the pulse sinks more than a third. These marked effects are, however, by no means always to be observed. A very great difference in the resistance of fevers to resorcin is to be noted, and here the same rules apply as in the action of the antipyretic agents already known. The less the tendency to spontaneous remissions, the less is the antipyretic effect of resorcin. The fevers of pneumonia and erysipelas are in general more obstinate than that of typhoid fever, and severe typhus in the first stage is controlled by resorcin much less promptly or much less adequately than the mild forms. On the other hand, resorcin does not completely fail, according to Lichtheim's experience, even in the most obstinate fever. Temperature and frequency of pulse fall also in these cases; only the fall of temperature often does not amount to more than one or two degrees (centigrade), and the pulse-beat to a corresponding extent. An unmistakable parallelism exists between the extent of secretion of sweat and the intensity of the defervescence, and the more marked these were, the greater is the fall of temperature.

Although resorcin has advantages over salicylic acid and quinine in respect to the certainty of its action and the extent of its effect, the duration of its action is much less than that of the above-mentioned remedies. Within two hours after its administration, and generally after three to four hours, the temperature begins to rise; and it rapidly ascends to its previous point, the patient meantime complaining of a sensation of cold, which sometimes amounts to a severe rigor. An hour later the temperature and frequency of pulse will be found at the former point, and the general state of the patient corresponding to it.

A great disadvantage of resorcin lies in the preliminary stage of excitement, to which reference has already been made. These symptoms of stimulation show themselves very strongly in a number of cases. Even in the milder forms, morning respiration is often noticeable, together with an increase in the frequency of respiration; and the tardy answers which the patient gives show that he is in a state resembling intoxication. In other cases these cerebral symptoms are much more marked: the patients begin to be delirious, they do not know where they are, they talk wildly, and their expressions indicate that they have illusions; speech becomes sometimes muttering and difficult to understand, and often there is at the same time a slight convulsive trembling of the hands and fingers. One patient fell into a deep sleep, from which he could not be aroused, but from which at the commencement of the defervescence he awoke without any unpleasant symptoms. The latter observation, which is unique, was, however, not made by Lichtheim himself.

All efforts which Lichtheim has made up to this time in order to lessen these collateral effects, without injuring the antipyretic effect of the medicine, have been without result. Even when resorcin was combined with salicylic acid, these phenomena of excitement occurred, although they were not very strongly marked. The effect of a dose of two grammes of resorcin on a patient to whom some hours before two grammes of salicylate of soda had been administered, was one of unusually long duration. According to Lichtheim, this phenomenon of excitement is the only difficulty which opposes the general use of resorcin as an antipyretic, especially in private practice. He especially mentions that an existing albuminuria was not increased by the use of resorcin, and that he has never seen any symptoms of collapse either during or after the administration of resorcin. He rejects the idea with certainty that resorcin can exercise any specific action on pneumonia, erysipelas, or enteric fever; on the other hand, it seems to him to be an antidote to intermittent fever. He refers, indeed, to only two cases. In

the first case, a quotidian fever with large tumour of the spleen, after a typical attack, he administered two grammes of resorcin at the beginning of the first premonitory symptoms of fever; only a very slight elevation of temperature occurred, no further attack of fever followed; the tumour of the spleen subsided very slowly, and the patient was allowed to leave at his own wish, with still a very large spleen. In the second case there was also a very old intermittent fever of the quartan type, with a large splenic tumour. The patient had gone through three paroxysms before he began the treatment. Dr. Lichtheim gave, at the commencement of the fourth attack, three grammes of resorcin. The shivering, which had already begun, passed off, but after about an hour recommenced, when two grammes of resorcin were again administered. The subjective symptoms of fever were completely cut down in the patient, although a slight elevation of the frequency of pulse and of the temperature occurred. On the next febrile day the prodromata of fever showed themselves again, but two grammes of resorcin sufficed to cut them short, and the elevation of temperature and pulse was only on a minimum scale. No subsequent attack of the fever occurred.

Together with the moderate price and much more agreeable flavour, resorcin has a great advantage over quinine, in that the administration of the medicine can be postponed to the beginning of the attack, and that, when the dose has too slight an effect, a subsequent increase of it is effectual. In this way any relapse can be prevented before an attack has fully established itself, and on the indication of the well-known prodromal symptoms. In these cases there were not any collateral symptoms, not even the slight cerebral symptoms of giddiness and buzzing in the ears.—*London Med. Record*, Oct. 15, 1880.

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Physiological Action of an Alkaloid extracted from the Garden Tulip.

Dr. Sydney Ringer has recently been investigating the physiological action of an alkaloid from the bulbs, leaves, and flowers of the garden tulip, and finds that tulipine differs almost entirely from the action of alkaloids derived from the plants belonging to the natural order Amaryllidaceæ so far as he has examined.

Tulipine is a muscle poison, affecting the muscles like veratria. It is, however, weaker than veratria.

It paralyzes either the cord or the afferent nerves, or both; but probably it affects the afferent nerves.

Its action on the motor nerves, if any, is but slight.

It affects the heart of frogs like veratria.

It does not affect the pupil.—*Practitioner*, Oct. 1880.

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Therapeutic Use of Pilocarpine in Skin Diseases.

In the *St. Petersburg Medic. Wochenschrift* of July 19th, appears a notice of the results obtained by Professor Pick from the use, over a space of two and a half years, of pilocarpine and its preparations in prurigo, psoriasis, eczema, pruritus, urticaria chronica, alopecia areata, trichoptilosis, alopecia pityrodes, acne, hyperidrosis, pemphigus chronicus, and lichen exsudativus, *i. e.*, in all skin affections where the secretion of sweat is more or less altered. Small doses of one-sixth of a grain in solution were ordered twice a day, one to two hours after food. Perspiration followed generally four or five minutes afterwards. After several weeks' use, unless intermitted, the dose had to be increased. The skin became softer and more pliable, scaliness diminished, and the hair was less brittle. The use of the remedy even for months in no way disturbed the general health. In 32 cases of prurigo the tormenting itchiness disappeared, and the relapses were somewhat delayed; while, again, in 25 cases of psoriasis no effect was seen. In

two cases of pruritus senilis, and one of urticaria, a cure was accomplished. In eczema, the result was not decided. In ten cases of alopecia pityrodes, good results followed; while in four cases of alopecia areata, no decisive result was obtained.—*London Med. Record*, Oct. 15.

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Physiological Action of Picrotoxine.

CHIRONE and TESTA (*Annali Universali di Medicina e Chirurgia*, April, 1880), after describing the physical characters and mode of preparation of this alkaloid, give the results obtained from a series of sixty experiments. The most important conclusions arrived at are the following: 1. Picrotoxine is capable of causing a true artificial epilepsy. 2. The epilepsy so induced is independent of the psychomotor centres, inasmuch as it is most intense after the removal of those centres. 3. Picrotoxine acts primarily on the bulb and on the commissural fibres between the cerebral and spinal centres, and secondarily on the spinal centres themselves. 4. It demonstrates the existence of a functional antagonism between the psychomotor and motor centres of the bulb and spinal cord. 5. The convulsive movements of the limbs induced by picrotoxine depend primarily upon the action of the drug on the bulb, which is thence propagated to the spinal marrow, and secondarily on its direct action on the spinal centres. 6. In frogs the influence on the spinal functions is more marked than upon the cerebral, while in dogs and the higher animals the cerebral motor centres are the most acted upon. 7. By cinchonoidine an epilepsy of cerebral, by picrotoxine an epilepsy of spinal origin, can be induced.—*London Med. Record*, Oct. 15, 1880.

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Anodyne Effects of Electricity.

MÖBIUS (*Berliner Klin. Wochenschrift*, 1880, No. 35) attempts to give a *rationale* of the remarkable effects obtained from this agent in allaying the pain in neuralgia proper, and in numerous other morbid conditions. Numerous authenticated cases, and the daily experience of those who are in the habit of using electricity, show that the pains arising from a variety of organic lesions are frequently allayed by electrization; such, for instance, as those met with in caries of the spine, meningitis, articular and muscular rheumatism, dental caries, uterine derangements, and those known as "headaches," the shooting pains of ataxy, etc. In all these the current acts on the symptom pain only. The author thinks it justifiable to argue from the fact that relief is obtained in a number of dissimilar cases, to the existence of a common feature in those cases. He thinks that electricity relieves pain only inasmuch as it is purely neuralgic, depending upon a molecular condition of the nerve set up by a neighbouring lesion (or idiopathic in the case of true neuralgia). The current, therefore, is a diagnostic as well as a therapeutic agent in the case of pain. As to giving an explanation of how electricity acts in neuralgia, this is impossible for the present.—*London Med. Record*, Oct. 15, 1880.

Medicine.

The Specific Agent of Typhoid Fever.

Professor KLEBS, of Prague, believes that he has discovered the micro-organism which constitutes the specific agent of typhoid fever, and develops his views in a paper entitled "Der Ileotyphus eine Schistomy cose," published in the *Archiv für Experimentale Pathologie*, t. xii. p. 231, 1880. Professor Klebs has for a long time, assisted by his pupils, been making researches in this direction. He

writes that he has been able to find, at the necropsy of twenty-four persons carried off by dothinenteritis, microbes in various organs: in the intestinal mucous membrane, in the thickness of the cartilages of the larynx, in the pia mater, in the foci of lobular pneumonia, in the mesenteric ganglia, in the parenchymata of the liver, and generally diffused in the organs which showed the most decided lesions. These micro-organisms showed themselves in the form of rods, about eighty micrometers in length and 0.5 to 0.6 micrometres in thickness. They have been constantly observed in the bodies of dothinenteric patients since the attention of Professor Klebs was drawn to the subject, and they are always absent from the organs, and specially the intestines, of subjects who have died from any other disease than typhoid.—*British Med. Journal*, Oct. 16, 1880.

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Successful Treatment at Ben Rhydding of Cases of Chronic Rheumatoid Arthritis.

Mr. FLETCHER LITTLE read a paper at the meeting of the Yorkshire Branch of the British Medical Association at Bradford, on June 16th, in which he described the successful treatment by the aid of the resources of this well-known establishment of several cases of this intractable and most severe disease. They were all cases occurring in women, and all of them were married. One was aged 35, another 51, and the third 67. One had suffered for fifteen months, another for three years, and the third for twelve years. In all, the grating in the joints was most distinct. All were in comfortable circumstances, but they all had gone through severe mental suffering. All showed, by the silvering of the hair, the anxious appearance, and the evident decrepitude, that decay had set in and must be stopped. All of them improved without any drawback from first to last, under patient treatment, oil-rubbing, the galvanic current, and the Russian vapour baths, applied during residence at Ben Rhydding. The patients had been previously treated by Mr. Pridgin Teale, Dr. Merriman, and others.—*London Med. Record*, Oct. 15, 1880.

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Locomotor Ataxy in several members of the same family.

At a recent meeting of the Clinical Society of London (*Lancet*, Oct. 16, 1880), Dr. GOWERS brought forward a series of five cases of locomotor ataxy in members of the same family, three of whom were exhibited. The father was healthy, but his brother and two half cousins were insane. The mother had suffered in early life from chorea. The family consisted of nine children: (1) A son, aged thirty-nine, with well-marked ataxy, which commenced at nineteen. He is just able to walk with crutches. There is incoördination in the arms and affection of articulation. Sensation to touch is normal, that to pain on the legs increased. The knee-jerk is lost. (2) A girl who died of fever at ten years old. (3) A son, aged thirty-five, healthy. (4) A son, aged thirty-three, healthy. (5) A girl, aged twenty-nine, in whom the affection commenced at eighteen. She can now scarcely stand; there is weakness in the legs, as well as ataxy, and also incoördination in the arms. Speech is affected; sensation is normal; the knee-jerk lost. (6) A son, aged twenty-six, perfectly well. (7) A son, aged twenty-three, considerably affected. The disease showed itself at nineteen; he is now scarcely able to walk, with ataxy of both arms and legs, and loss of sensation, absence of the knee-jerk, and affection of articulation. (8) A son, aged twenty-two, reported to be well, but found, on examination, to be distinctly affected. Articulation is confluent, there is inability to stand with eyes shut, absence of knee-jerk, and distinct impairment of sensation on the legs to touch. The arms are at present unaffected. (9) A son, aged nineteen, affected

in rather a greater degree than the last, with slight unsteadiness of gait, inability to stand with eyes shut, distinct impairment of sensation to touch, absent knee-jerk, unsteadiness in writing, and confluent articulation.

The state of sexual power is doubtful, the patients being all single. Thus of eight members of the family who have reached adult life, five are affected, a daughter and four of the seven sons. The symptoms, allowing for the variations in degree, are similar in all, the chief difference being the marked impairment of the tactile sensation in the two youngest, while in the others, in whom the affection has reached a more advanced stage, it is normal, and except that in one there is hyperalgesia. The only causal influence discoverable is the neuropathic heredity.

This form of ataxy was first described as a distinct variety of ataxy by Friedreich, who recorded two groups of cases, and a few other instances have been recorded by Carré and others. Two sisters, evidently suffering from this disease, were shown in 1872 to the Medical Society of London by Dr. A. Carpenter, and in this family a brother has since become affected. Those now shown resemble Friedreich's in the early date of commencement, the affection of the arms, and the interference with speech. They differ from Friedreich's in the number of males affected and in the absence of nystagmus and in the affection of sensation in two individuals. It is noticeable that none have suffered from any pains in the limbs; there is no affection of the iris or of the optic nerve. As in Friedreich's cases, the antecedents were of other forms of nerve disturbances, not of ataxy. The term "hereditary ataxy" seems therefore of doubtful accuracy. Friedreich described the affection of speech as ataxy of articulation, but it does not differ from that seen in other degenerative diseases of the nervous system. The pathological changes were found in two of Friedreich's cases to be in the main similar to those in ordinary ataxy.

Dr. J. Althaus thought that cases of ataxy were more common than usually supposed, and were often confused with paralysis. He had seen more than two hundred cases, but in none of them was more than one member of the family affected, nor could any strict heredity be traced; but in all the cases there was a neurotic tendency observed in one or both parents. Carré's cases were the most remarkable yet recorded. In one instance he states that this form of ataxy was observed in a woman, in her eight children, and in the seven children of one of the daughters—sixteen persons in all—and in three generations. It was remarkable that the pain of ordinary locomotor ataxy was quite absent in this condition, and that the affection of sensation was only slight. He thought that it would be well to follow up the history of those members of this family who were at present unaffected, and also to make careful trial of various therapeutic agents.

Dr. Greenhow had never seen such cases before; and from the striking facts of the early age of the patients when first affected, and the complete absence of pain, thought that the disease differed from common locomotor ataxy.

Dr. Gowers had found that ataxy was very rarely to be traced to hereditary influence; he had stated two years ago that fifty per cent. of patients suffering from it had a history of previous syphilis, and he now thought it more accurate to say that such was the case in seventy-five per cent. of cases of sporadic ataxy, in all ranks of society. Apparently the disease is the same in those cases occurring in families, as the posterior columns of the spinal cord had been found to be the seat of degeneration. One of the most remarkable facts is that the disease begins at about the age of twenty, and that any members of such a family who are free at twenty-five escape altogether. So marked a feature is this that a recent applicant for life insurance, who had three brothers and sisters thus

diseased, but was himself unaffected and much beyond the age of twenty-five, was recommended by him for acceptance as not being prejudiced.

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Visceral Neuralgia.

Dr. NEFTEL (*Archiv für Psychiatrie und Nervenheilkunde*, Band x. p. 575) describes several cases of recto-vesical and uterine neuralgia, in which every kind of treatment, including that of the organic lesion which was supposed to be the cause of the symptoms, had proved useless. Starting from the hypothesis of a nutritive disturbance of the centres in the spinal cord, he tried the effects of the galvanic current, centrally as well as peripherally applied, with the most happy results. His method in cases of severe dysmenorrhœa is to apply a large electrode (anode) over the genito-spinal centre (Budge's), and close a current of 15 to 20 elements (Daniell's), with a plate above the pubes. A few voltaic alternations are slowly made; then the anode is passed up and down the spine (strong pressure must be exerted), whilst the current may be increased to thirty elements. The same process is repeated whilst the cathode rests upon each inguinal region successively. Relief almost invariably follows such an application. Should this not be the case, higher strengths of current are to be used. A warm drink and sharp walk are advisable after the sitting, which is to be repeated daily during the period. In the time between the monthly paroxysms a milder galvanic course is advantageously pursued towards the accomplishment of an actual cure. Perhaps much depends on the excellent results obtained by the use of a similar method in cases of other visceral neuralgiæ, of congestive and chronic inflammations of the pelvic organs, and also of the central nervous system, on the stimulation of the splanchnic nerves, and consequent extensive vaso-motor effects in the abdominal and pelvic viscera. Dr. Neftel strongly urges the use of galvanism in such cases, and supports his case with good instances. He concludes his paper by showing how a latent malarial cachexia may be unexpectedly brought to light by galvanic application.—*London Med. Record*, Oct. 15, 1880.

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Paralysis of Lower Limbs following Pelvic Abscess, or profuse loss of Blood after Abortion.

Mr. WILLIAM ADAMS, at a recent meeting of the Medical Society of London (*Lancet*, Oct. 30, 1880) read a paper entitled "Cases of Paralysis with Contraction of One Leg, following pelvic abscess in women; and of both legs following excessive loss of blood after miscarriage." The pathology of these two forms of paralysis with contraction in women is very different; one referring to damage done to the nerve trunks of the sacral plexus by inflammatory exudations, from which only imperfect recovery is likely to occur, and the other to some obscure affection of the spinal cord itself, probably involving slight structural change in the motor tract, from which a good, though not quite complete recovery may occur.

In the *first class* the accumulation of pus in a pelvic abscess, instead of advancing, as it generally does, along the iliac region, and opening through the abdominal parietes, passes backwards and upwards, opening through the rectum or vagina. The nerve trunks of the sacral plexus become imbedded in lymph, which in time contracts, and, so to speak, strangles the nerves, leading to paralysis, with loss of sensation and motion, more or less complete on the affected side, from the hip downwards. The recovery from this condition in the case brought forward has been very imperfect. After a period of four years, the limb only being rendered useful in walking by mechanical support.

In the *second class* the pathology is more obscure. In the case adduced, par-

tial paralysis with contraction of both legs occurred within three weeks of a miscarriage, followed by excessive loss of blood, from which there seemed to be but little hope of the patient recovering. This condition was by some supposed to be the result of "myelitis from loss of blood;" by others, "spinal anæmia." Another suggested explanation was that it depended upon a purely functional derangement. Opposed to the last suggestion, Mr. Adams considered were two important objective symptoms: first, the muscular wasting and general atrophy of the legs; and, second, the peculiar atrophic condition of the skin, which was thin, white, and shiny; predisposed to tear on slight stretching, and corresponding to the so-called "glossy skin" described by Weir Mitchell, Charcot, and Paget as amongst the changes in nutrition of tissues resulting from nerve lesions. The conclusion, therefore, Mr. Adams arrived at was that structural changes had occurred in the motor tract of the spinal cord, from which considerable, though not complete, recovery has taken place up to the present time—six and a quarter years since the miscarriage. The muscles of the hip-joint, and some muscles of the legs, still remain partially paralyzed, but she is able to walk with some assistance. The surgical treatment in the late stage of contraction consists in tenotomy and gradual mechanical extension, either by the use of instruments, or weight and pulley. Forcible extension should never be employed to overcome muscular contraction. With a view of promoting the recovery from the paralysis, Mr. Adams recommended galvanism, shampooing, passive motion, and warm clothing.

Dr. Allen Sturge, who had examined the second patient referred to by Mr. Adams, stated that in the right leg there was very marked weakness of the flexor muscle of the thigh and of the muscles of the calf, complete paralysis of the tibialis anticus and extensor proprius pollicis, the extensors of the thigh and the peronei being nearly or quite healthy. In the left leg there was marked weakness of the psoas and iliacus, of the flexors of the thigh and of the calf muscles, the extensors of the thigh and the muscles in the front of the leg being healthy. The paralyzed muscles were almost completely wasted, and their reaction to faradaism was greatly diminished. The condition then was paralysis of groups of muscles in the two legs, with wasting and loss of electricial reaction, without loss of sensation or affection of the bladder—the exact condition seen in infantile paralysis. Dr. Sturge believed, therefore, that the lesion was the same as in the latter disease—viz., acute inflammation of the anterior horns of gray matter in the spinal cord. This condition is now well recognized as occurring in adults, and recently it has been met with as a sequel to typhoid fever and smallpox. May it not therefore occur after parturition or other acute exhausting disease?

Dr. Althaus said that the paralysis in the first case was clearly owing to neuritis of the sacral plexus, the inflammation spreading from the pelvic cellular tissue to the nerves. The second case was more obscure, and he discussed the various probable conditions. He discarded the possibility of functional derangement without structural disease. Spinal anæmia occurred after hemorrhage, not only from the womb, but also from the bowels or kidneys, after profuse epistaxis, and occasionally in chloro-anæmia, leading to paraplegia; but it was invariably recovered from under appropriate treatment. Ischæmia of the cord, due to embolism or thrombosis, was clearly not present in this case. There only remained meningo-myelitis, and, looking to the early rigidity, he thought that it probably was a case of pachymeningitis with compression of the cord by inflammatory products, especially of the lateral column.

Dr. Routh thought cases of pelvic cellular abscess passing into paraplegia must be rare. He had not met with one in his own practice, and he thought this might be due to his habit of opening these abscesses very early. He related a case he had seen in consultation, where paralysis with contraction followed a pelvic cel-

lulitis; and vaginal examination under chloroform revealed a fibrous mass attached to the sacrum. The copious hemorrhage in Mr. Adams's second case may have been due to a fibroid growth.

Dr. EDIS mentioned a somewhat similar case, where a lady, having fallen in the street, being four months pregnant, suffered from hemorrhage, retroflexion, and septicæmia. The latter gave rise to much anxiety, although there was no evidence of local pyæmic deposit. Within six weeks from the accident paraplegia, with contraction of the legs and thighs, occurred. This was treated by forcible extension under chloroform and by mechanical appliances, with considerable benefit.

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A Case of Aphthongia, or Spasm of the Hypoglossus.

Dr. MOSSDORF (*Centralblatt für Nervenheilkunde*, No. 1, 1880) relates an interesting case of spasm in the domain of the hypoglossus (with associated spasms of some respiratory muscles), in which the ordinary treatment for stammering had failed to produce any permanent good. Galvanization of the head and phrenic nerves was persevered in for two months without any result, but the application of strong galvanic currents with the anode at the occiput, and the cathode labile along the spine, produced within a week a marked improvement. Several short courses of this treatment at intervals have brought about what seems to be a permanent cure. The author contrasts this result with that obtained in a case of stammering from spasm produced by irritation of the right facial nerve after a blow. In this case faradization and galvanization peripherally applied failed, but the continuous current sent through the cortical centres effected a speedy cure.—*London Med. Record*, Oct. 15, 1880.

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Treatment of Dyspepsia.

M. DAMASCHINO (*Le Progrès Médical*, May, 15, 1880), defines dyspepsia as a morbid state characterized by slowness and difficulty of digestion. This definition, so uniquely symptomatic, is very accurate, for dyspepsia is only really a symptom either during the evolution of a gastric affection or in the course of or subsequent to a general malady. The etiology of dyspepsia is very varied, for age, sex, temperament, habit, and certain diatheses exercise a marked influence upon the development and course of the digestive trouble. In this way the varied symptomatic forms which are observed in this pathological condition are explicable, as well as the inefficacy of the most rational methods of treatment which is so often noticed. Amongst the numerous remedies for dyspepsia, the digestive ferments, and of these more especially pepsin, occupy the foremost place. To enable these remedies to act with certainty they ought to approximate as closely as possible to the conditions under which they act in the natural state; by the union of pepsin with hydrochloric acid a very soluble digestive ferment is obtained, which is found to possess an exceedingly energetic action; in combination with pancreatin, coca, and bitters, which increases its eupeptic action, it forms the basis of the elixir of Grez. This preparation acts not only by its own digestive properties, but also by stimulating the secretion of the gastric juice, so that it is also a peptogen. A great number of experiments have been conducted in the French hospitals, in regard to the use of this elixir in the treatment of intractable cases of dyspepsia, with a result that there has been a rapid improvement of the general condition, with a complete remission of all the symptoms, pains, gastric meteorism, eructations, and vomiting. Affections connected with stomachal vertigo, and migraine arising from functional impairment, have been rapidly cured. Digestive troubles also, which are so frequent in adults, and more especially at

puberty, as well as in chloro-anæmia, have invariably yielded to the influences of this remedy. Phthisis is nearly always complicated with dyspepsia, often in the form of obstinate vomiting, which rapidly aggravates the condition of the patient; in such cases the elixir has afforded the most excellent results by curing the vomiting and altering the state of the alimentary canal. Rheumatic and gouty patients, who for a long time previously had digested with difficulty, have recovered their digestive functions after a few days of this treatment. Lastly, this elixir has been employed at the Children's Hospital in numerous cases of chronic diarrhœa and vomiting with the very best results, and it has even been used with success in that most severe and dangerous of the affections to which children are exposed, infantile cholera.—*Practitioner*, October, 1880.

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On Alcohol and Creasote in Infantile Diarrhœa.

In the infantile diarrhœa of infants artificially fed, Dr. DEMME, of Berne, is not content with prescribing breast-milk, but recommends alcohol in conjunction with benzoate of soda or with creasote, after the following formula (*Journal de Med. et de Chir. Pratiques*): Cognac, 2 to 5 grammes; creasote, 0.1 centigramme; pine tar, 1 to 5 grammes; distilled water, 50 grammes every twenty-four hours between the sucklings. In very young babies the quantity of alcohol—at first two grammes—should be gradually increased to five grammes. The object of this draught is at once to stimulate nutrition, and to check the too abundant formation of the micrococci which load the intestinal glands.—*London Med. Record*, Oct. 15, 1880.

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The Treatment of Bright's Disease.

In the medical clinic of Genoa during the scholastic year 1877–8 (Virchow's *Archiv*, Band 80, Heft 3), the quantity of urine and albumen, the other chief phenomena, and the influence of various methods of treatment, were ascertained in six cases of Bright's disease. For a certain number of days a fixed method of treatment was adopted, and then a change was made in another subsequent number in favour of another method, in order in this way to study the activity of the various modes of treatment. Professor DE RENZI arrived at the following conclusions: 1. When chronic Bright's disease is left entirely without treatment, in general no improvement is shown; hence this must be excluded from the category of those diseases which in many cases end in spontaneous recovery. In the first days after entering the hospital, or when the treatment is purposely left off, the patients show a considerable quantity of albumen; this rule has, however, some exceptions which have not up to the present time been well explained. 2. Fuchsin, which has lately been recommended in the treatment of Bright's disease, produces a remarkable diminution in the quantity of albumen. It was employed in two forms: dissolved in water, or, mixed with a suitable extract, in pills of 2½ centigrammes each. As, however, the strong coloration of the infusion of fuchsin in water is somewhat repulsive, Dr. De Renzi found it preferable to administer it in the pill form, and to this he has adhered in his latest prescriptions. 3. The daily daily dose of fuchsin may be much greater than that in which it has hitherto been recommended in the treatment of Bright's disease. Dr. De Renzi generally began with a very small dose of 5 centigrammes (0.75 grain), raising it to 25 centigrammes (3.8 grain), to be taken in twenty-four hours. A considerable physiological action on the principal functions of the body was observed. According to the dose of fuchsin, the urine began sooner or later to show a red colour, which maintained itself throughout the treatment. 4. The urine in Bright's disease often exhibits a great deal of mucus. Fuchsin is very useful

against this complication, as, in a short time, it causes the complete disappearance of the mucus from the urine. 5. The mucous membrane of the digestive tract is deeply coloured by fuchsin, and the blood-plasma undergoes considerable coloration. In two cases, the quantity of hæmoglobin and the chromometric state of the blood were examined with Bizzozero's instrument with the following results: *Maria Molinari*: Cytometric state, 160; Hæmoglobin, 68.7; Chromometric state, 175. *Theresia Gabella*: Cytometric state, 115; Hæmoglobin, 29.7; Chromometric state, 112. It is evident that the increased intensity of colour is not to be ascribed to the increase of hæmoglobin, but rather to the increase of the fuchsin in the blood. 6. When fuchsin does not pass into the urine, this is an indication of an organic disturbance which must not be neglected. In these cases, it is of no use in the treatment of albuminuria. 7. Rest of the patient in bed is a very important means of diminishing the albuminuria in Bright's disease. In a patient, *Vittorio Rossi*, complete rest in bed, together with milk-diet, brought about the greatest diminution of the albumen in the urine. Dr. De Renzi was several times able to ascertain that unusually active movement of the person had a dangerous effect in Bright's disease. 8. Apomorphia was in general well tolerated; and Dr. De Renzi has ordered it in larger doses than usual (viz., 5 to 6 centigrammes daily) without causing the least disturbance. In one case, this medicine considerably improved the condition of the patient.—*London Med. Record*, Oct. 15, 1880.

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On the Treatment of Intraperitoneal Rupture of Hydatid Cysts.

At a recent meeting of the Académie de Médecine (*Le Progrès Médical*, 1880, p. 426), M. Férol read a paper on the subject, in which he stated that in the present condition of our knowledge it is impossible to say exactly what circumstances determine the comparative mildness or malignity of the symptoms which accompany rupture of hydatid cysts into the peritoneal cavity. The following conclusions, however, may be stated with some degree of confidence. 1. Previous suppuration of the cyst gives rise in case of rupture to a subacute rapidly fatal peritonitis, at least where the peritoneum had not been sealed by adhesions which limits its inflammation. 2. The penetration into the peritoneum of an absolutely limpid and clear fluid, which appears to be inoffensive in some cases, is followed in other cases by rapidly fatal accidents. 3. The presence of living hydatids thrown into the peritoneum is less dangerous than that of dead hydatids: spontaneous cure is possible in the former case. 4. In cases where the peritonitis following rupture becomes moderated, and where, nevertheless, ascites is produced, intervention may be practised with some hope of success if the ascitic fluid be not absorbed. Simple puncture is alone sufficient to effect a cure. If this procedure fail, it may become necessary to evacuate the foreign bodies contained in the peritoneum as soon as possible. A large opening may be made into the abdomen by a trocar, and cleansing out of the peritoneal cavity twice daily may be employed with success.—*London Med. Record*, Oct. 15, 1880.

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Glycosuria.

According to modern theories, diabetes is supposed to depend, to a large extent, perhaps entirely, upon derangement of the vaso-motor mechanism of the liver. This point in the pathology of the disease has been the subject of a recent series of investigations by M. Laffont, which have been published in the *Gazette Médicale de Paris*. Claude Bernard, as is well known, showed that division of the cord between the seventh cervical and first dorsal vertebræ arrested the effects of the "diabetic puncture" of the floor of the fourth ventricle, and hence con-

cluded that the path of the nervous influence was by the splanchnic branches of the sympathetic, and that the glycosuria is the result of an irritation, not of a paralysis, of the nerves, since the latter would not be removed by a second division of the path. M. Laffont has endeavoured to ascertain the truth of this opinion, by stimulating the first dorsal pair of nerves by faradization, and observing the effect of this stimulation on the vessels of the liver. In the first series of experiments he opened the spinal canal, and divided the cord at two spots, isolating a segment corresponding to the first and second dorsal pairs. He next exposed the liver, and observed changes in its vascularity by the naked eye. The observations were made upon dogs. On irritation of the isolated segment of the cord, the liver was observed to present disseminated congestion, accompanied by a corresponding injection of the intestine, and turgidity of the spleen. The view that the morbid influence is irritative rather than paralytic is thus confirmed.

Bernard also found that the stimulation of the central extremities of the vagus increased the amount of sugar produced; while Bezold ascertained that similar stimulation caused, in curarized animals, a fall in intra-arterial pressure, which, Ludwig and Thiry showed, was due to dilatation chiefly of the abdominal vessels. Vulpian attributed this effect to the simultaneous stimulation of the central extremity of the depressor branch of the vagus. M. Laffont has endeavoured to ascertain whether this latter view is correct, and he found that intermitting stimulation for an hour of the central extremities of the depressor nerves, by means of a weak faradaic current, produced actual glycosuria, the sugar amounting to from twenty-five to forty-nine grammes per litre of urine. This fact had, indeed, been already ascertained by Filehne, who stated further that the faradization of the central extremities of the pneumogastrics themselves in the rabbit does not cause glycosuria. The latter fact is not corroborated by Laffont. He was able by such stimulation to cause a glycosuria amounting to from eight to seventeen grammes of glucose per litre, and believes that it is due to the asphyxia produced by this stimulation.

In another series of experiments it was found that painful stimulation of any mixed nerve, frequently repeated, caused glycosuria at the end of a certain time, amounting, in different animals, to from four to nine grammes of sugar per litre. Next, the effect of division of the first two or three pairs of dorsal nerves on the glycosuria resulting from puncture of the floor of the fourth ventricle was investigated in rabbits. Threads were placed around the roots of the first two dorsal pairs, and, the effect of the diabetic puncture having been ascertained, the nerves were torn through by means of the thread. The effect was that the sugar fell from twenty and forty grammes per litre to seven or twelve grammes. The effect of this operation on the vascular phenomena caused by stimulating the central portions of the pneumogastric or depressor nerves was then examined. It was ascertained by means of a canula introduced into the carotid or crural artery. In the dog, the stimulation of the central extremities of the pneumogastrics with a strong current caused always an enormous increase of pressure, while feeble stimulation produced, on the other hand, a considerable diminution of pressure. The roots of the first three or four dorsal nerves were then torn through, and after this the feeble stimulation, which had before caused a fall in the blood-pressure, produced a considerable rise. The result was the same in the rabbit, with the exception that a strong stimulation of the depressor nerves never caused an increase in the blood-pressure. Thus the separation of the dorsal nerves prevents the effect upon the circulation otherwise caused by the stimulation of the pneumogastric or depressor nerves.

What is the effect on the abdominal circulation of stimulating the peripheral

extremities of the upper dorsal nerve roots? Since all the roots could not be simultaneously excited, the first pair only was stimulated, the animal being under the influence of curara. A fall in the blood-pressure resulted, not considerable in degree, because under the influence of curara there is already dilatation of the abdominal vessels. The pressure was estimated in the splenic artery, or in one of the branches of the mesenteric artery. It was thus ascertained that the stimulation of these nerve roots by a weak faradaic current caused always a fall in the arterial pressure in the abdominal organs if the root is carefully isolated. The least extension of the current to the spinal cord itself caused an increase of pressure.

The conclusions drawn from these experiments confirm the view that the glycosuria which results from the stimulation of the central extremities of the pneumogastric nerve in the dog, the depressor nerves in the rabbit, and the sensory nerves generally, is the results of an impression conveyed to the bulbar vaso-dilator centre, the path from which is by the cervical cord, the first dorsal nerve roots, and the sympathetic and splanchnic nerves. It is conjectured to be by an action upon this centre that certain cardiac and general diseases may cause glycosuria. These effects, and those of the diabetic puncture, are prevented by the separation of the upper dorsal nerve roots, while the effect of stimulation of these divided roots shows that they contain dilator nerves for the vessels of the abdominal viscera.—*Lancet*, Oct. 23, 1880.

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Melæna Neonatorum.

Dr. J. Halliday Croom, Physician to the Royal Maternity Hospital, Edinburgh, records (*Med. Times and Gaz.*, Oct. 23, 1880) four cases of melæna neonatorum, which are of interest on account of the rarity of the disease and of the obscurity of its pathology. Dr. Croom remarks that it is at the outset necessary to draw attention to the fact that melæna neonatorum, as generally understood, is of two kinds, melæna vera and melæna spuria. With the latter (melæna spuria), where the blood does not come from the stomach or gut, but either (*a*) from other parts of the child, mouth, nose, lungs, or (*b*) from the nurse's breast,—the present communication has nothing to do. The cases that I now record are cases of melæna vera.

Case 1.—In May, 1870, I saw with a dispensary pupil a child, five hours after a normal, easy birth, suffering from "bloody diarrhœa." The child, which was to all appearance a perfectly healthy male at term, had passed when I saw him about a teacupful of dark, treacly-looking matter; and about an hour after the first, another equally copious motion passed, which on examination proved to be almost entirely blood. The action of the bowels was evidently unaccompanied by any pain. The infant became cold, vomited a small quantity of milk, and afterwards about a desertspoonful of pure blood. During the succeeding twelve hours the child had six motions. The first five were mixed with blood; the last was scanty, and contained only meconium. During and shortly after each motion the infant became cold, motionless, and seemingly exhausted by the hemorrhage, but between the attacks became more lively, sometimes cried and took the breast. The child made a perfect recovery. Decadence of the cord took place on the sixth day without hemorrhage. While discussing the case with my pupil, he incidentally told me that the father of the child had come to the dispensary the previous week to have a tooth extracted, and that during the night the man had sent for him to have the bleeding stopped, because it had continued to faintness. The man, aged thirty-four, was fair and slender, but in vigorous health. As a boy he said that he had frequently suffered from epistaxis, and that even in adult life he had been more than usually subject to bleeding from the nose. He had

had three (including the present) teeth extracted, and after each there had been an unusual loss of blood. He had never any wound or bruise so far as he remembered, and no swelling or affection of the joints. The mother had given birth to three children, all of whom had died in early childhood of diseases having no bearing on the present subject. She could give no history of any unusual tendency to hemorrhage in herself or any relative.

Case 2.—On the morning of January 10, 1875, an apparently healthy male child, extracted by forceps owing to rigidity of the soft parts, was, six hours after birth, seized with a copious discharge of dark blood per rectum. When summoned, the woman in attendance stated to me that the first two motions from the child were natural, that when the blood passed the child evinced no sign of pain, and she did not know anything unusual had happened until she examined the napkin. I saw the napkin; it contained coagula and stains sufficient to correspond to, say, a claret-glassful of blood. The child seemed well, cried vigorously, and moved its limbs freely. Four hours after the first there was a second and more profuse discharge of blood, and within half an hour a third, less severe, however, than either of the former. I saw the infant shortly after the last hemorrhage; the extremities were cold, the face blanched, pulse hardly perceptible, and the child lying motionless and collapsed. Small quantities of brandy were ordered, and warmth to the extremities. The child remained much the same till midnight, when it cried feebly, and passed a scanty but otherwise normal stool. In the early morning there was a slight return of the hemorrhage. During the following day the child gradually improved, took the breast, and from that time onwards made a complete recovery. Decadence of the cord was unaccompanied by hemorrhage. In this case forceps was applied to hasten a delivery protracted by rigidity of the soft parts. Very little compressing or extracting power was required. Shortly after birth the child presented blotches on either side of the head, involving the cellular tissue behind the ear, the posterior part of the external ear, and the scalp over the parietal bone. The blotching was more marked on the left than on the right side. The ecchymoses, as they seemed to be, disappeared on the fifth day, and were evidently the result of the pressure, slight though it was, exerted by the forceps. The infant died three months afterwards from diarrhœa, but no post-mortem could be obtained. Both father and mother were of phthisical descent. I could trace no tendency to bleed in the parents or in their families.

Case 3.—After a labour extending over seventeen hours, Mrs. S. A., multipara, was delivered of a small but healthy male fœtus, at term, without artificial aid. Ten hours after birth I was asked to see the child, whom I found pale, blanched, pulseless—in fact, moribund. The woman in attendance told me that during the day it had passed quantities of blood by the bowel. I was shown the napkins, and found them soaked with blood. Except the first napkin all the rest were stained more or less with blood, some of them saturated. The child died shortly after I saw it.

Sectio Cadaveris.—Rigor mortis well marked. Lungs and heart were healthy, but the substance of the heart was very pale. The whole intestinal tract was carefully examined bit by bit, but no trace of any ulcer, abscess, or erosion, either in the stomach, duodenum, or any other part of the gut, could be discovered. There was in the lower parts of the bowel some slight congestion along with several clots of blood. There was no enlargement of spleen. All the organs were extremely pale and exsanguine, but healthy.

Helmbrecht relates a case somewhat similar to this, where a child a few days after birth died from bloody diarrhœa and vomiting of blood. Congestion of the rectum was the only morbid condition found on post-mortem examination.

Case 4.—An infant, three weeks old, hand-fed, was suddenly, during the night, seized with profuse dark diarrhœa, accompanied by occasional vomiting of blood. I was summoned in the morning, but the child had died an hour previous to my visit. On inquiring of the nurse, I was told that on the previous evening the child was apparently quite well. During early morning the child was seized with what appeared to be diarrhœa. The nurse was, however, struck with the dark colour of the stools, and on examination found them to consist almost entirely of blood. During the night there was considerable vomiting of blood. I requested a post-mortem examination. This was granted, and the section was performed by Dr. Illingsworth, one of the demonstrators of anatomy in the University, who made the following report: Pericardium contained about a teaspoonful of serous fluid. Heart normal; valves competent. In the aorta was found a post-mortem clot partially decolourized. Septum ventriculosum normal. Fossa ovalis ventriculi empty. Right auricle filled with a firm clot; left auricle contained firm clots. Lungs slightly congested at their base, more especially the right lung. No embolism found in any of the branches of the pulmonary artery. Bronchi filled with glairy mucus. Stomach normal. Duodenum—capillary injection of mucous membrane, especially of upper two-thirds, but no sign of ulceration. Rest of intestine and other organs normal, but pale.

It is not my intention now to enter into any description of the symptoms or treatment of this disease. The symptoms are plain—a discharge of blood from the bowel, either with or without hæmatemesis. The treatment in such early infant life amounts to *nil*. I wish rather to draw attention to its pathology.

The rarity of this affection has not had any effect in limiting the suggestions which have been advanced to account for it; on the contrary, they have been both numerous and varied.

Billard[1] ascribes the condition to a follicular inflammation of the stomach and bowel. Bouchut[2] divides bleeding from the intestine during early infant life into three groups—first, from purpura; second, from passive congestion, the result of compression at birth; third, as a result of acute or chronic inflammation of the stomach.

Rilliet and Barthez,[3] after discussing the probability of the hemorrhage being the result of compression at birth *ab* plethora of the veins of the abdomen, discard these as causes, and suggest that heredity plays an important part in the disease.

West[4] says that in the greater number of cases the occurrence has taken place within a few days, sometimes within a few hours after birth, and in some instances has followed a tedious labour, in which the head of the child has been much compressed or otherwise injured during attempts at extraction, while in other cases the difficulty in the establishment of the respiration has seemed to be the predisposing cause of the hemorrhage. Very often, he adds, no reason can be assigned for it.

Braun[5] suggests a variety of causes which may account for melæna—congestion of the mesenteric vessels, pressure during birth, heredity, intra-uterine interference with nutrition.

Gerhardt[6] draws attention to the extreme rarity of the affection, but throws little or no light on the pathology.

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[1] Traité des Maladies des Enfants nouveau-nés et à la Mamelle. Paris, 1828.
[2] Traité Pratique des Maladies des Nouveaux-nés et de Enfants à la Mamelle, deuxiéme édition, pages 592, etc. Paris, 1852.
[3] Traité Clinique et Pratique des Maladies des Enfants, vol. ii. Paris, 1853.
[4] Diseases of Infancy and Childhood, p. 595.
[5] Compendium des Kinderheilkunde. Vienna, 1871.
[6] Lehrbuch der Kinderkrankheiten. Tübingen, 1871.

Steiner[1] says that the round, perforating ulcer is a very rare thing in infancy, but has been met with by Billard and others in the new-born. He thinks it due to fatty degeneration of the arteries, and its special symptom is described as melæna neonatorum.

In an elaborate monograph on the subject, Landau[2] reviews the pathology of melæna. He passes in review the many extravagant hypotheses that have been suggested as explaining this rare and little understood affection. He then comes to the more recent views of Hecker, Buhl, and Spiegelberg.

Hecker and Buhl base their statements on two post-mortem examinations which revealed the existence of abscesses respectively of stomach and duodenum. Hecker, however, does not suggest any cause for the abscess.

Spiegelberg made two post-mortems on children who died from this cause, and in both he found abscesses in the duodenum. He is of opinion that their origin is intra-uterine. Landau reports two cases of mælena, both of which were fatal, and in both of which careful post-mortem examinations were made. In both, abscesses of the duodenum were found.

Landau comes to the conclusion that nearly all uncomplicated cases of melæna which occur in otherwise healthy new-born children depend on material changes in the stomach and gut—*ulcis ventriculi sive duodenum rotundum*, upon rupture of an artery or a vein. Unlike the authors to whom I have already alluded, he thinks these ulcers do not depend on fœtal inflammation of the stomach, nor are they of intra-uterine origin. He believes that they arise in connection with occurrences at birth causing derangements of the circulation, very often by a small embolism, either secondary or primary, arising from pressure and restraint of the first inspirations.

In the few cases recorded by Landau, in which careful post-mortem examinations were made, there can be no doubt that the perforating ulcers he so minutely describes were the cause of the hemorrhage and death. His suggestion as to the embolic origin of the ulcer is a valuable and ingenious contribution to the pathology of the disease.

This explanation does not, however, hold true of the majority of the cases of melæna. The greater proportion recover. Barthez and Rilliet[3] alone make mention of twenty-two cases, of which twelve recovered. This would hardly be the result in cases of ulceration sufficient to give rise to hemorrhage to the extent mentioned; and again, in many of those cases—notably those of West—in which post-mortem examinations were made, no morbid change could be found in any of the abdominal viscera. In these latter, therefore, ulceration, whether the result of embolism or not, could not have been the cause of the hemorrhage.

I am inclined to think that in the cases I have recorded we have indications at least of the direction in which we are to look for some, perhaps of most, cases of melæna.

In the first case it has been shown beyond doubt that the hemorrhagic tendency was well marked in the father, not certainly to the length of being a marked case of hæmophilia, but sufficiently to show the tendency to bleed. In the second case, although no tendency to bleed could be traced in the parents, still the fact that the ecchymoses, so extensive, occurred on either side of the child's head as the result of but very slight pressure by the blades of the forceps, seems to show that the child had a marked tendency to hemorrhage from very slight causes. Even in extreme cases of contraction at the brim, where great compressing and

[1] Steiner's Diseases of Children, translated by Lawson Tait, p. 237.
[2] Ueber Melæna der Neugeborenen, von Dr. Leopold Landau. Breslau, 1874.
[3] Op. cit.

extracting power has to be used, frequently no mark further than an indentation from the blades of the forceps is to be seen. Apart, then, from the melæna, this child had a tendency to bleed.

In Cases 3 and 4, although no reliable family history of bleeding could be obtained, and although the child showed no indication of a tendency to hemorrhage other than the melæna, yet the fact that the post-mortem examination gave no trace of any morbid condition save patches of slight congestion here and there in the intestinal canal, leaves the suggestion as to a diathetic tendency to bleed a feasible one.

In these four cases at least a hereditary or congenital tendency to bleed, either spontaneously or on very slight provocation, would seem to be the pathological explanation of the condition. It is true that in only two of the four cases had I an opportunity of making post-mortem examinations, the result being that no morbid condition could be found. This, however, I consider to be rather confirmatory of my view than otherwise, because it is an ascertained fact that in those who are the subjects of hæmophilia, and in whom death has occurred from extensive hemorrhage, no morbid change can be found, nor any single point discovered to account for the bleeding. Again, if the pathology of hæmophilia consists, as has been shown by Dr. Wickham Legge,[1] in an imperfect development of the whole vascular system, so that the fœtal state—not, of course, of the circulation, but of the vascular walls—remains in extra-uterine life, it seems to me probable that the pressure exerted on the child during birth, the establishment of circulation and respiration, combined with the active movements of the child's body, may give rise to hemorrhage from the thin-walled capillaries along the intestinal tract.

But, apart from physiological exciting causes such as those I have just mentioned, any cause interfering with the respiration will occasion increased pressure on the venous system and render the tendency to hemorrhage more marked. Now, other causes are exceedingly common at birth, such as tedious labour, aspiration of mucus, as well as the pressure of instruments. In two of my cases such causes were, no doubt, factors in the production of the hemorrhage.

Beyond being occasioned by ulceration of the gut, or as a general oozing from the capillaries, which I believe to have been the fact in the cases I have just recorded, or from venous congestion the result of obstructed respiration, melæna vera may be caused by[2] rupture of a vein, polypus of the gut, or perforation from round worms.

In looking at the sex of the children affected, Barthez and Rilliet[3] find girls more subject to it than boys. Landau[4] also points out that the affection is more common in girls than in boys. Barrier[5] groups twenty-one cases, of which twelve were girls and nine boys. Of my own four cases three were boys and one a girl. There can be no doubt, however, that of the recorded cases the majority were females. Now, this will be pointed out as an argument against my suggestion, that the cases we are now dealing with are cases of early development of hæmophilia, because it is admitted that boys are more subject to hæmophilia than girls. In fact, in the earlier accounts of hæmophilia, girls were supposed to be entirely exempt. A glance at Lange's paper,[6] in which are collected all the then (1849) published cases of hæmophilia, shows that there were 227 or 229 boys to 31 girls. Grandidier[7] showed 452 boys and 31 girls.

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[1] A Treatise on Hæmophilia, by Dr. Wickham Legge, page 100.
[2] Landau, op. cit. [3] Op. cit. [4] Op. cit.
[5] Traité Pratique de Maladies de l'Enfance. Paris, 1848.
[6] Lange: Oppenheim's Zeitschrift, Bd. xliv. p. 157.
[7] Grandidier, Die Hämophilie, page 87. Leipzic, 1858.

Now, it is worthy of remark, that of the recorded cases of deaths from round perforating ulcers, all, without exception, were girls—*e. g.*, cases recorded by Spiegelberg and Landau. This is only in accordance with what is found in adult life, where ulcer of the stomach is more common in women than in men. If we therefore withdraw from our calculation the fatal cases, many of which in all probability depend on ulcers either of the stomach or duodenum, we shall have the balance of the sexes more nearly equal, and therefore render the suggestion of hæmophilia feasible enough; and in my own cases the question of sex does not enter at all, as, of the four cases, three were boys and only one a girl.

The period of early infant life at which melæna usually occurs varies considerably, but it is generally within one or two days after birth. In the majority the symptoms develop between the first and sixth days. Of fifty cases, collected from various sources, I find that the hemorrhage took place—in thirty, between the first and sixth day; in eight, between the sixth and eighth day; in four, between the eighth and twelfth day; in eight, between the twelfth and eighteenth day. Of the first thirty cases, six developed within the first twenty-four hours.

In regard to prognosis, Landau points out that there is no record of a cured case of gastric or duodenal ulcer in a new-born child. The cases which recover are those which owe their origin to some of the other causes of which I have referred. Taking the cases altogether the mortality is about 60 per cent.

The diagnosis of melæna is simple—the discharge of blood per orem or per anum, or both—but the exact diagnosis of the cause is altogether another matter. If the melæna occur after a difficult labour, or when there has been difficulty in establishing the respiration, then venous congestion or rupture of a vein may probably be credited with the cause, or it may be an early symptom of hæmophilia. If the melæna take place shortly after a normal labour in an otherwise healthy child, especially if any hereditary tendency to bleed can be traced, the cause will probably be found in a condition of the vessels similar to that found in hæmophilia. If the melæna occur profusely several days after labour, if there has been any interference with respiration, and if the case be fatal, the cause may be looked for in a gastric or duodenal ulcer, originating, as Landau shows, in an embolism.

Surgery.

Notes on Chian Turpentine, and its Use in Cancer.

Dr. JOHN CLAY, Obstetric Surgeon to the Queen's Hospital, Birmingham, publishes in the *Lancet* (Oct. 2, 1880) the following additional article on this subject which has of late attracted so much attention.

In the correspondence which has been recently published in the medical journals the efficiency of Chian turpentine in the treatment of cancer has been altogether denied by certain writers. Some have suggested that unsuccessful results may be attributed to the impurity of the drug employed; others have ungenerously questioned the validity of the statements made in my paper, which appeared in the *Lancet* for March 27, 1880. It consequently seems advisable to offer some further general observations, by way of explanation and elucidation, on the subject.

It is a matter for regret that the supply of the genuine Chian turpentine has been so limited, as this has led to the substitution of factitious drugs, the use of which, as I have previously explained, unfavourably influences the results, besides entailing the further disadvantage of preventing a thorough testing of this method of treating cancer. I believe it is a fact that Chian turpentine, in mass, can

scarcely be procured in this country at the present time, and therefore it is obvious that the treatment of the disease must be somewhat in abeyance until a supply of the pure drug arrives from abroad. I hope that the difficulty will soon be overcome, as I have been making special efforts to obtain the pure turpentine direct from Scio, and have had three excellent samples of the genuine drug sent to me through the post from that island; a supply may therefore be expected shortly, when the purity of the drug at least will be definitely determined. The specimens referred to differ in some particulars from the Chian turpentine which I have previously described, and which had been in stock some years. There are also samples of larch turpentine in the market, which slightly resemble the recently gathered genuine drug. It may be of advantage therefore to the profession to describe each, and to note their differences.

Specimen No. 1 is of a pale, amber colour, and almost entirely free from impurities. It has the fragrant odour peculiar to Chian turpentine well marked, which is readily perceptible after rubbing a small portion between the thumb and finger. It has a mild terebinthinate taste, which rapidly disappears. On placing a small portion of the drug on a piece of glass, and exposing it to the atmosphere, it considerably thickens after a few days' exposure.

Specimen No. 2. This, obtained last year, is the drug as collected. It contains a large quantity of foreign matter, such as pieces of bark, sand, etc., all of which give it a darker colour than the last-mentioned specimen. Two ounces of this crude product yielded, after straining, upwards of half an ounce of impurities. The strained portion contained still a quantity of minute particles of foreign substances. The taste and odour are the same as in the Specimen No. 1.

Specimen No. 3 resembles soft glazier's putty, but is somewhat whiter, and is of the same consistence. It is Chian turpentine that has been well washed in water, to free it from impurities. It has a mild taste of turpentine, and the peculiar odour is well-marked. If a portion is subjected to pressure between two pieces of glass, water can be readily forced out of the mass.

Three specimens have been submitted to me as genuine Chian which were purely larch turpentine. They may, as alleged, have been gathered in Cyprus. They have a strong odour of pine wood, and are of a browner appearance than the recent specimens just described. On tasting a portion, it appears tasteless for the first minute, after which a strong, bitter, nauseous flavour became manifest, eventually leaving a strong, sickening sensation at the back of the throat, which is slow to disappear. A portion placed on glass, and exposed to the atmosphere for four weeks, showed no signs of thickening, and readily adhered to the fingers.

The degree of solubility of the two kinds of turpentine, in ether and alcohol, is not materially different from that described in a former paper. The mild terebinthinate taste of the pure drug, its peculiar odour, with its power to solidify on exposure to the atmosphere, are characters sufficient to distinguish it from any other turpentine resin.

The results of the treatment of various forms of cancer, in the hands of certain medical practitioners, are alleged to be so different from those obtained by myself, that these gentlemen have thought fit to question the validity of my experiments. Certain results obtained by the use of a remedy, almost forgotten by the therapeutist, were placed by me unreservedly before the profession; and for the benefit of suffering humanity at least a fair trial of the remedy ought to be given before condemning it. In testing the efficiency of the drug, it is doubtless all-important that the true one should be used. It would appear to be not an easy matter to decide the question of purity, for upwards of three hundred specimens have been sent to me for examination by English and foreign medical men, most of them being guaranteed by the druggists supplying them, and it was a surprise to me to

find so few examples of the genuine article amongst them. It will be as necessary now as before to use extreme vigilance in this respect in expectation of the new supply. In a large percentage of cases the factitious turpentine only has been used in the treatment of cancer. In one institution this was particularly so; and after the genuine drug had been tried for about three weeks the results of the two were combined, and a letter forthwith appeared in *The Times*, alleging that the remedy was useless. A similar instance occurred in an institution in this town, where the impure drug was first used, and then after a trial with the pure drug for about three weeks, letters appeared in a medical journal declaring that the remedy was of no benefit in the treatment of cancer. It is plain that sufficient time has not been allowed to elapse for the full effects of the remedy to be manifested, as in these instances of condemnation it has almost invariably been declared inoperative after a few weeks' trial only. Besides the unsatisfactory results which have accrued from the use of the impure drug, the full effects of the pure turpentine have not been gained in some instances from the drug not having been entirely digested. This has arisen occasionally from its incomplete preparation for administration. In compounding the mixture, freshly prepared mucilage of tragacanth, B. P., has not been used, and then it rapidly decomposes; or sufficient of the mucilage has not been employed, which causes the resin to separate, and the doses of the medicine, therefore, have been irregular and insufficient. It has been shown in the *Pharmaceutical Journal* that acacia powder might be advantageously substituted for the tragacanth. It is necessary, therefore, to provide that a sufficient quantity of either gum shall be used in the preparation of the Chio turpentine mixture. Where the digestive powers are impaired, an addition of twenty minims of the compound tincture of cinchona to each dose has occasionally proved beneficial. The discontinuance of the sulphur has been advised, in order to make the mixture more elegant and miscible. I believe, however, that the mixture is more efficient, when it is well tolerated, if prepared with the sulphur.

In reference to the pills, if they are not properly prepared they are not always digested. If this is discovered on examining the evacuations, the use of the mixture in conjunction with the pills is indicated; that is, a dose of the mixture should be taken by the patient night and morning, and two pills in the middle of the day, in each case after food. It is advisable, when commencing the treatment, to give only half doses of the turpentine for the first week. Magnesia should not be used as an excipient in the preparation of the pills, but whether this exception ought to apply to the recently collected drug future experiment will have to decide. Pills prepared with magnesia are almost insoluble, and the same remark applies to some coated ones. The pills may be prepared sometimes with ether, to soften the turpentine, or it may be made soft by immersing the mortar in a hot-water bath, the sulphur being added to the mass in its softened state. The latter mode appears preferable, if only to facilitate the digestion of the pills, as if any difficulty is met with in this way they may be roughly powdered and taken in milk or some bland liquid, and then they are generally digested.

The statements made in my original paper as to the efficacy of Chian turpentine in cancer appear to me to be fully confirmed by the additional experience gained in the use of the remedy. In the cases previously reported the cancer has disappeared, and there are no signs of its return. This fact must be considered at least as a complete refutation of the statements, recently and boldly made, that Chian turpentine in the treatment of cancer is useless. The cases just referred to are unique of their kind, for, so far as I know, they are the only instances on record of cancer being cured solely by the administration of an internal remedy

I feel justified, therefore, in stating that uterine cancer at least may be removed by the use of Chian turpentine.

It is a fact which might be expected that most of the cases of cancer which have presented themselves are in an advanced stage of the disease; and more especially is this the case in cancers of the uterus. Yet the treatment continues to be very efficient. My experience does not stand alone in this respect, for several gentlemen have given independent testimony of the good effects produced by the turpentine treatment in cancer of various organs. In my original experiments the turpentine alone was used in order to thoroughly test its efficacy, but it now appears that the use of certain local and general measures undoubtedly promotes the convalescence of the patient. It is possible, therefore, to formulate a line of treatment which shall be successful in cancers of the uterus. Hence, given a case of cancer limited to that organ, and a steady use of the remedy for six or eight months, continued with certain general and local remedies if necessary, and a disappearance of the cancer may be reasonably expected. Eleven cases of uterine cancer under this treatment at the Queen's Hospital, besides a number of others in private practice, so far justify the preceding statements. Some very interesting facts have been observed during their treatment, which I hope to detail on a future occasion.

It is advisable not to be too precipitate in rejecting a case of uterine cancer on the ground of its being too far advanced for treatment. The following case, amongst others, is to the point. Mary B. took her discharge from the Middlesex Hospital, London, about four months ago, and, according to report, was informed that her case was incurable, and that she had not long to live. She had heard of the turpentine treatment, and was very anxious to be under my care at the Queen's Hospital, but I advised her not to undertake the journey, as I believed the case, from what I heard of it, was too far advanced for treatment. This advice, however, she disregarded, and became an in-patient at the Queen's Hospital. Here she was placed under the Chian turpentine treatment, and improved so much in nine weeks that she is about to return to London with every prospect of soon being cured.

In cancer of the uterus the conclusion expressed in a former paper, that the remedy destroys the cancer cells and causes the death of the growth, is strengthened by experience, and, as a consequence, there is cessation of pain and hemorrhage in the first instance. But the turpentine at first does not destroy the bloodvessels of the part. As the dead tissue escapes, these become denuded, and give rise to hemorrhage, especially at the menstrual period. In patients who have past the climacteric period this has not been observed. Ergot has been found of no benefit in arresting the hemorrhage. Insufflation with three grains each of sulphate of zinc and powdered charcoal, once or twice a day, after syringing the vagina, has proved effectual, and appears to promote the obliteration and atrophy of the vessels. The same end may be attained by using a weak solution of perchloride of iron and glycerine. I have ordered some patients to syringe the vagina daily with equal parts of common vinegar and water, with good effect. When the anterior walls of the vagina are involved, either primarily or from extension, the case is not so suitable for treatment with the turpentine. A vesico-vaginal fistula is soon generally formed, but if this do not happen, cystitis supervenes, and the patient succumbs to the uræmic symptoms which are rapidly developed. Moreover, the turpentine is not well tolerated, but when a fistula forms, it is better borne, and uræmia does not arise.

Excision of the cervix uteri is not advisable, as the disease readily extends to the anterior wall of the vagina subsequently; and then the bladder complications, above described, arise with increased force. The use of the curette is not so

objectionable if it is employed to remove only the sloughing mass after some weeks' use of the Chian turpentine, but it has not been deemed necessary to use the instrument, it being all important to preserve as much normal tissue as possible.

The mode in which Chian turpentine effects the removal of cancer was well illustrated in a case of epithelioma of the vulva. The patient, aged sixty, had been operated upon for cancer of the clitoris or vulva. The case was reported in the *Lancet* at the time. The patient thoroughly recovered from the operation. About a year afterwards cancer reappeared in the lower part of the vulva and vagina. The growth was again excised, and she made a good recovery this time. About eight months afterwards a cancer appeared on the right labium, and when it was there seen for the first time it was the size of half-a-crown. It was determined to give the Chian turpentine, and the drug was given in full doses three times daily. At the end of the first week there was no alteration, excepting that the cancer was thought to be somewhat paler on its surface, and the surrounding swelling less. Second week: The growth was coated with a secretion of a grayish colour, which appeared to be firmly adherent. Fourth week: The growth was only half its former size. Its surface was somewhat convex; and was considerably thicker than previously, and was surrounded by a ring of a bright crimson colour. One of the resident surgeons of the hospital who saw it remarked that it looked like a small mushroom springing from the vulva. Sixth week: The growth was now diminished to the size of a fourpenny piece, and was still surrounded by the bright coloured ring, but was free from the secretion. The surface did not bleed on being touched. Eighth week: The coloured ring had disappeared. The growth was much smaller, and it had the appearance of a large "seedy" wart, such as is sometimes seen on the hands. Tenth week: The growth remained about the same. Twelfth week: The growth had all but disappeared, and the patient went into the country for a short time, but promised to report herself when she returned.

In private practice three cases of cancer of the rectum are under treatment, two of which are much improved; and one has not been seen again, but a favourable report is given after seven weeks' trial. Three cases of cancer of the stomach are under treatment; one has discharged herself, but the other two have remarkably improved, as regards freedom from pain and capacity of retaining nourishment, though continual sickness existed previously. So far as the treatment has extended, these cases seem to prove that the turpentine is equally, if not more, efficient in cancer of the stomach than of any other organ. In one case the glands of the neck were much enlarged; but these swellings entirely disappeared after the use of the remedy. Four cases of cancer of the tongue have been under observation. In one case the growth was as large as a cherry, and in four weeks it was reduced to a level with the mucous membrane, and it appears now to be cicatrizing.

Several cases of cancer of the face have been very much benefited. In two cases of endothelial cancer of the abdomen and one of cancer of the liver, no benefit seemed to be derived, excepting that in one case there was some alleviation of pain, and an improvement of general health for a time.

In all forms of cancer, where the turpentine has been taken for six or eight weeks, I have found the administration of a tonic to be of advantage, as it promotes the convalescence of the patient, and if the disease affects the uterus or rectum it seems to facilitate the escape of the débris from the destroyed mass, and to promote cicatrization. Four minims of the tincture of perchloride of iron, and three minims of liquor strychniæ, taken three times daily, are recommended; and if there be any pain, which often happens after six months' use of the remedy, six drops of tincture of belladonna are added. A generous diet is allowed.

Morphia is not advised. The bowels should be kept daily moved, when necessary, by a mild aperient. After the turpentine has been regularly taken for three or four months, I now recommend it to be discontinued for three or four days in the fortnight. It is probable that future experience will show that, after it has been taken for the above-named period, it will be no longer necessary in the majority of cases, but as a precautionary measure it has been generally continued in the manner just described.

There are sixteen cases of cancer of the breast under treatment in the hospital, and a large number are under observation privately. The effects of the remedy in the first few weeks are, the relief of pain, and a diminution in the size of the breast, which is generally more movable, even when apparently fixed to the walls of the chest; this probably arises from a diminution of the surrounding cancerous infiltration. Time has not been sufficient, however, to speak with definiteness as to the ultimate results. The clinical facts brought out in this class of cases are very interesting and instructive. There is a great probability that the disease is arrested, as after four months' trial of the remedy the morbid growth has not increased in size. As far as can be stated at present, for therapeutical purposes the cases appear to be divisible into three classes: 1. The ordinary scirrhus of the breast, with or without surrounding infiltration. 2. Epithelial cancer. 3. Cases of ulceration after previous operation.

In the *first* class of cases great interest attaches to the experiment, as indicating how the solid mass is removed. It appears at present to deport itself as if it were a foreign body, and seems disposed to make its way rapidly to the surface; but in the cases where this has occurred the growth is not of an active character, for as the mass comes to the surface a crust forms upon it. This disappears in time, and another forms, while the whole bulk of the mass gradually diminishes in size. It may prove eventually that this is one mode of the removal of the disease. In these cases the growth does not increase in size, but, on the contrary, gradually diminishes.

In the *second* class—*i. e.*, epithelial cancers—the surface of the growth becomes paler at first, then smoother, as if it had been levelled by friction; sometimes some of the nodules slough away. Then a process of cicatrization takes place. There are two cases in which the new tissue around the growth is quite half an inch in breadth. Two others, about one and a half and two inches respectively in diameter, have entirely healed over.

In the *third* class of cases the results are so far favourable that the ulceration has not increased in size, but they have not progressed so favourably as the other cases. In several instances the glands of the axilla have been enlarged, but the enlargement has generally disappeared under a steady use of the turpentine.

The importance of these imperfect notes to the profession, and the influence they may have in aiding the treatment of cancer will, I hope, be a sufficient apology for reverting to the subject. At least I trust I have shown that the remedy is not useless. I may, in conclusion, state that in the treatment of these diseases patience and perseverance for a few months are absolutely necessary. In some diseases which affect the human race, a continued treatment for twelve or eighteen months is often thought requisite. It has, I believe, been here shown that the remedy does produce some influence on the progress of cancer; and it is but reasonable to require that a similar indulgence be extended to the treatment of cancer by this method, as in the chronic diseases just referred to. As the remedy can be taken with impunity for a long period, and if time be granted for the trial of it, I feel that I am justified in stating that its steady use promises excellent future results.

Partial Tenotomy of the Muscles of the Eye.

Dr. ABADIE, in the *Annales d'Oculistique* (May, June, 1880), urges, in certain cases of insufficiency of the internal recti, a partial tenotomy of their antagonists. He bases this teaching on von Graefe's doctrine, and recommends the revival of the method of partial division of the tendon, which that great master actually performed in one year as many as 120 times. Dr. Abadie has himself, of late frequently performed the operation with very satisfactory results. His procedure is as follows. The first stage of the operation is the same as that for ordinary strabismus: the hook is passed under the tendon of the muscle, and any slight hemorrhage at once restrained, for the operator must have a clear view of the tendon. The tendon is then snipped across about half-way, with sharp pointed scissors, commencing at the free border of the hook. A similar incision into the tendon is made in a direction towards the handle of the hook, a few tendinous fibres being left adherent to the sclerotic. In the last eight months, Dr. Abadie has performed this operation ten times, with the result of relieving asthenopia, due to insufficiency of the internal recti, in cases where prisms had completely failed. The great advantage of the treatment, according to the author, is that it is prophylactic, and can be applied at a very early stage, so soon, in fact, as any insufficiency of the internal recti becomes evident; that is the proper treatment to check the onset of those pathological changes which characterize progressive myopia. Once such changes as thinning of the membranes of the eye, atrophy of the choroid, lesion of the macula, and finally, detachment of the retina have supervened, treatment is powerless. [In an able note appended to this paper, M. Giraud-Teulon combats the author's conclusions, and points out that he has adopted von Graefe's earlier views, forgetting altogether that von Graefe himself abandoned partial tenotomy after an experience of ten years; and in his latest writings insisted on the necessity of a complete division and detachment of the muscle from its sclerotic attachments.—*Rep.*]—*Lond. Med. Record*, Oct. 15, 1880.

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Choroiditis as a Sequel of Relapsing Fever.

In the *Klinische Monatsblätter für Augenheilk.* (Jan. 1880) Dr. JULIUS TROMPETTER reports that, in three hundred and twenty-five cases of relapsing fever in Breslau, twenty-one cases of choroiditis were observed; they were mostly of the acute form. On admission to hospital, the patients mostly presented the characters of well-marked choroiditis in the form of cyclitis. Very frequently hypopyon appeared, in the absence of inflammatory phenomena on the part of the iris. Turbidity of the vitreous humour was ascertained in all the cases; and the visual acuity was always considerably impaired at the commencement of the illness. The field of vision showed a limitation of the periphery in all directions. The course of the choroiditis was in general favourable; its average duration was from a month to six weeks. In two cases, both eyes were affected. Dr. Trompetter believes that the affections of the eye in relapsing fever are due to embolism arising from partial necrosis and abscess of the spleen.—*British Med. Journal*, Oct. 30, 1880.

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Emphysema from Inflation of the Tympanum.

Professor VOLTOLINI relates the following case of the above accident which he has recently met with (*Monatsschrift für Ohrenheilkunde*, May, 1880). Mr. H., aged 28, suffered for several years from progressive deafness without definite cause. The watch was not heard with the left ear, and on contact only with the right. The auditory canals and membranes presented nothing abnormal. On

catheterizing, air passed into the tympanic cavities with a very weak stream. The finest bougies (India-rubber with olive-shaped ends) could only be introduced with difficulty, on account of either some narrowing or bending of the tube. Larger bougies were gradually introduced, with decided benefit to the hearing. One day, on inflating the right ear with the bag, after one of the thicker bougies had been passed, sudden pain in the throat was experienced, and emphysema could be felt extending to the lower part of the larynx on the right side and also above the larynx on the left side. No bad effects resulted from this On the left side only the thinnest bougie was employed, but, in spite of this, one day, whilst air was being blown in with the bag, the patient jumped up suddenly and tried to spit something up out of his throat. On inspection, the uvula was found blown out with air into a white bladder. This was immediately relieved by a few snips with the scissors. The author thinks that this case speaks strongly against the use of the condensing-pump for inflation, which, if employed in this case, he supposes might have produced sudden death by emphysema in the larynx. —*Lond. Med. Record*, Oct. 15, 1880.

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Gastrotomy for Establishing a Gastric Fistula.

Dr. Carl Elias, of Breslau, in a contribution to the *Deutsche Medicinische Wochenschrift*, No. 25, 1880, points out that gastrotomy, performed for the relief of carcinoma of the œsophagus, has hitherto been almost invariably attended with bad results. Whilst in some few instances in which a gastric fistula had been established for the relief of symptoms caused by impermeable cicatricial stricture, the patients survived in good health for many months after the operation, similar treatment in instances of carcinoma of the œsophagus has always been followed by death within a period of three months. In most of the forty instances of gastrotomy performed for œsophagus carcinoma during the past two years, the patient died in the course of a few days after the operation. The author then proceeds to discuss the question whether, in the face of such results, it will be prudent for surgeons in future to attempt to establish a gastric fistula in cases of cancer of the œsophagus. An analysis of the cases in which gastrotomy has been performed shows, the author states. that very few of the patients died from acute peritonitis consequent on the operation. Since the introduction of the antiseptic method, and also in consequence of recent improvements in the method of fixing the stomach to the edges of the wound in the abdominal wall, the risks of acute peritonitis as a result of gastrotomy have much diminished. The statistics of recent ovariotomy prove that operations on the abdominal cavity have been attended with much less danger since the introduction of Listerism. The author, in order to show that very severe operations may be performed on the stomach under antiseptic conditions without exciting peritonitis, refers to a case in which he attempted to excise a cancerous growth at the pylorus. In this case, although the whole of the stomach had been drawn out through an incision in the abdominal wall, the patient subsequently remained quite free from fever and lived until the twentieth day after the operation, when death occurred simply as a result of the disease. In most of the cases of carcinoma of the œsophagus in which a gastric fistula was established, the author believes the operation had been too long postponed, and the patients died in consequence of exhaustion and slow starvation. If it be recognized that gastrotomy for establishing a gastric fistula is a safe operation when performed with antiseptic precautions, and that good and plentiful nourishment is one of the main therapeutical objects in cases of carcinoma of the œsophagus, then it must be allowed, it is argued, that the surgeon is not only justified in performing the operation in cases of such disease, but is bound to have recourse to such proceed-

ing at as early a stage as possible, and to establish a gastric fistula before the patient's strength has been reduced to a minimum and the cancerous disease has far advanced. The irritation of the diseased parts by the passage of food is thus removed, and the patient's mind is thus relieved from the fearful prospect of death from starvation. Lumbar colotomy, performed for the relief of the symptoms of rectal cancer, is now a recognized operation, and in cases of acute laryngeal stenosis tracheotomy is often performed for the sake of euthanasia, and notwithstanding the probability of speedy death from diphtheria or croupous pneumonia.

One of the most important points in the operation for establishing a gastric fistula, is the secure attachment of the anterior wall of the stomach to the edges of the incision in the anterior abdominal wall. Unless care be taken in applying the sutures, there is a risk, during vomiting or coughing, of the stomach being separated and slipping far back into the abdominal cavity. The author prefers for this part of the operation an interrupted suture of tough and firm material, involving, on the one hand, a broad piece both of the serous and the mucous coats of the gastric wall, and, on the other hand, the whole thickness of the abdominal wall, including the peritoneum. This is sufficient to retain the empty stomach in position until it has contracted firm adhesion to the parietes. It is unimportant whether the material of the suture be silver wire, catgut, or silk, and equally so whether the wall of the stomach be incised immediately, after the application of the suture or subsequently, after an interval of some days, when the parts have contracted firm adhesion. The author reports a successful case of gastrotomy for establishing a gastric fistula. The patient, a male, aged 46, first experienced difficulty in deglutition in May of last year. This symptom gradually increased, and in November the man was unable to swallow solid food. During the interval he had suffered from occasional attacks of pain in the back and right shoulder, and in October deglutition of small masses of solid food was followed by cough, nausea, and vomiting. From the commencement of the present year he became weak, and rapidly lost flesh. Dr. Elias saw the patient for the first time in February, and, after exploration of the œsophagus, diagnosed an annular carcinomatous structure in the lower third of the canal. In spite of the daily introduction of the œsophageal tube the structure progressively contracted, and at the end of May it was found impossible to pass any instrument through which fluid food could be introduced into the stomach. Gastrotomy was then performed with attention to all antiseptic precautions, save the use of the spray. Much difficulty was experienced in finding the stomach which was very small and not distinguishable from intestine, until after free exposure both of the viscus and of the mesentery with the gastro-epiploic vessels. During the application of numerous sutures of stout carbolized silk, the stomach was retained near the surface by two long needles passed at right angles to each other through the anterior walls of the viscus. During the first four days after the operation the patient suffered very much from pain in the epigastric region, and from almost intolerable sensations of hunger and thirst; but, after incision of the gastric wall and final establishing of a fistula, on the fifth day, he progressed favourably, and ultimately, with regard to the operation, made a good recovery. When last seen by Dr. Elias, the patient was able to walk about, his pulse and temperature were normal, he reported the conditions of his life to be tolerable, he had been relieved of the dread of dying from starvation, and there was a good prospect of his living for some time.—*Lond. Med. Record*, Oct. 15, 1880.

On the Incision of the Kidney—Nephrotomy; and on the Extra-peritoneal Removal of the Kidney—Nephrectomy.

W. Heineke contributes, to Von Pitha and Billroth's "Handbook of Surgery," the following interesting article on Nephrotomy and Nephrectomy—two operations which have been performed of late, and have attracted considerable attention.

After referring at some considerable length to the literature of the subject, and quoting the now well-known opinions of Hippocrates, Riolan, Rayer, and others on the advisability and practicability of incising the kidney, Dr. Heineke goes on to say that towards the end of the seventeenth century the thought arose with surgeons to shorten the sufferings of patients afflicted with stone in the kidney by extirpating the kidney entirely. This idea was suggested by the results of experiments made on dogs by Zambeccarius, who, having succeeded in removing the spleen of a dog, next proceeded to cut out the kidney. Stephen Blancard repeated the experiment on the dog with success, and several surgeons who saw the operation were of opinion that the kidney in man could be removed entire after ligaturing the vessels. Rayer, thinking only of the removal for renal calculi, condemned the operation because he thought the diseased kidney would be so closely adherent to the peritoneum that it could not possibly be removed without fatal injury to that structure. But the question of nephrectomy reached a new stage when G. Simon, in 1869, successfully performed the operation for the cure of a fistula of the ureter, after convincing himself of the feasibility of the operation by repeating the earlier experiments of others on dogs.

Dr. Heineke first confines his remarks to the indications for the operations, and, secondly, goes on to describe how the operations are to be performed.

Indications.—The incision of the kidney, *i. e.*, nephrotomy, aims at opening the pelvis of the kidney so as to empty it of its pathological contents. Such an evacuation is desirable and necessary if the pelvis of the kidney contains calculi, or if it is expanded by pus or urino-purulent fluid. In the normal condition of the kidney, the pelvis is covered by the substance of the kidney in such a way that it is not possible to cut into the pelvis of the organ through a lumbar incision without incising the excreting structure. An incision through the substance of the kidney, owing to the great vascularity of the organ, leads, however, to considerable bleeding, which, as in the case of accidental injury of the kidney, may easily become fatal. Nor is it easy to check hemorrhage from the kidney through the depth of the wound. The incision into the pelvis of the kidney must therefore never be made through the substance—at least, not as long as this part of the organ is in a normal condition.

In cases, however, in which the pelvis of the kidney is required to be opened, it is frequently possible to reach it without penetrating the substance of the kidneys, owing to the cyst-like distension of the whole body of the organ. The kidney being thus changed, the operator, after making the lumbar incision, has before him a renal cyst, which is recognizable by distinct fluctuation, and as the dilated pelvis spreads over the edges of the hilus of the kidney, he can readily reach the thin cyst-wall. Not unfrequently, too, in those cases in which the renal substance forms part of the limits of the cystic dilatation, this substance is so atrophied, and the bloodvessels so few and small, that only a thin layer, and that not very vascular, has to be cut through in order to reach the contents of the pelvis of the kidney. In such cases, an incision penetrating the renal substance will not induce dangerous bleeding.

The incision of the kidneys from the region of the loins is indicated for the

purpose of removing calculi or pus or urino-serous effusions if the pelvis of the kidney can be opened without causing perilous injury to the substance of the kidney; and, as just stated, this possibility exists when the pelvis of the kidney is considerably dilated.

If calculi are present in the pelvis of the kidney they frequently excite pyelitis, and this leads to distension of the pelvis of the kidney with pus. From other causes also, such as catarrhal inflammation of the bladder and consequent blockage of the urine, as well as exanthematous affections, pyelitis may arise and gradually lead to considerable dilatation of the basin of the kidney. In cases of this sort pains exist in the region of the kidney, which now and then become vehement; sometimes vomiting occurs; the urine contains a purulent sediment, and has a mostly acid reaction; there is fever and occasionally rigours, and often a very high temperature in the evening. If the pelvis of the kidney contains calculi, attacks of renal colic and blood and gravel in the urine are additional symptoms. In cases of suppurative nephritis without the presence of gravel in the urine, attacks similar to renal colic due to stone sometimes occur as the result of obstruction of the ureter from polypi.

After these symptoms have existed for a long time the suppuration reached to the substance of the kidney, abscesses form in the cortical parts of the kidney until the whole organ is turned into an abscess-cavity. By the escape of the pus from this renal abscess into the tissues surrounding the kidney, deep-seated abscesses in the loins arise, which break through in the direction of the back, burrow into the pelvis, or empty themselves into a neighbouring cavity. The longer the process exists, the less prospect is there of a spontaneous cure; and the patients decline gradually on account of the suppuration and hectic, and die at last of debility or of septicæmia or pyæmia. In such cases the incision of the kidney may be of avail; it ought to be proceeded with if the suppuration and consequent debility increase, or if the patient is troubled by frequent renal colic, as soon as a painful fluctuating swelling can be detected by palpation in the region of the kidney through the abdominal wall, or by the rectum. If stones are found in the pelvis of the kidney after it is opened they are to be extracted.

If the symptoms of pyonephrosis are present, it is advisable to cut into the swelling, even if fluctuation be not yet distinct. If a cystic expansion of the pelvis of the kidney can be felt and reached from the lumbar wound, it must be opened. If there be an abscess in the substance of the kidney, then this too should be incised. If through the lumbar incision a perinephritic abscess be disclosed, it will be judicious to search with the finger or a probe for a sinus which may be leading into the pelvis of the kidney or through the secreting substance, and if such be found it will have to be dilated.

In cases of hydronephrosis, if the sac of the kidney has become very large, so as to be close to the front wall of the belly, it is better to open the tumour through the lateral part of the front of the abdomen than through the loin; but should the symptoms necessitate an opening being made at an early stage of the hydronephrosis, the incision through the loin must be had recourse to. The same rule also applies to cases of pyonephrosis.

The extirpation of the kidney—nephrectomy—can only be undertaken if the other kidney still performs its functions properly. It is indicated in cases of hemorrhage from the kidney threatening to be fatal; in suppuration of the kidney likely to become lethal through exhaustion, putrefaction, or pyæmia; in calculous disease of the kidney, if not curable by incision of the kidney; in cases of new growths of the kidney; and in cases of fistula of the ureter not curable in any other way. The hemorrhages which occur after injuries to the kidneys are not infrequently so considerable that the patient may succumb to the bleeding

alone. After injuries which have been caused by some contusing power, and where there is no external wound, the hemorrhage is more easily stopped, because the clots which accumulate in the kidney close the vessels by the pressure which they exert. Even bleeding from the chief branches of the renal artery is not apt under these circumstances to continue long; hence it very seldom happens that subcutaneous injuries of the kidney cause death through hemorrhage; and such injuries have been observed, even after lasting and repeated hemorrhage, to terminate favourably.

It is different with the injuries of the kidneys caused by stabs, blows, cuts, and gunshot wounds. In these cases the blood can escape outwardly, and there is not the same tendency to check it by the accumulation of clots; and therefore the danger of hemorrhage from the kidney is considerably greater, the blood escaping through the outer wound as well as through the ureter. Should bleeding in such cases continue, and all other means fail, nothing remains but to ligature the vessels at the hilus of the kidney; and as this proceeding would cause the death of the kidney, the extirpation of the kidney must be added to the ligation of its vessels; or rather, it is necessary to begin by detaching or separating the kidney, and one must ligature its vessel as the last step of the removal, for the ligation of the vessels is scarcely practicable before detaching and drawing outwards the kidney. When in a case of severe bleeding there is danger in the delay, Simon has advised not to wait to detach the kidney from its surroundings, but to proceed at once to the hilus, and ligature the vessels; and not till then to complete the extirpation of the kidney. It is doubtful, however, whether more time is not lost in this procedure than in ligating the vessels after detaching the kidney from its surroundings; on the cadaver at least the latter proceeding can be more quickly performed than the former.

Extensive and protracted suppuration of the kidney which threatens to cause death, either through the fever of suppuration or through pyæmia, demands the extirpation of the affected organ. In many cases, it is true, the incision of the kidney will suffice, especially when the suppuration has settled essentially in the pelvis of the kidney, and has caused considerable expansion of the same, as well as in cases of large abscesses of the substance of the kidney which lie close beneath the renal capsule, and which are accessible through an incision in the loin or through an existing wound. Extensive suppuration in the kidney and its surrounding tissues renders the complete removal of the diseased organ necessary. This form of suppuration occurs especially after injuries to the kidney, whether compound or subcutaneous. On the other hand, idiopathic pyonephritis in most cases, if there be need of any operation at all, may be cured by the incision of the kidney; but the operation of extirpation is generally impracticable, because both kidneys are affected by the disease.

Extirpation of the kidney was undertaken by Von Bruns in 1871, for dangerous suppuration following a gunshot wound of the kidney. The kidney could not be entirely separated, as it had formed considerable adhesions; the pedicle was therefore tightly surrounded with a ligature, and the convex half of the kidney taken away. The patient died at the end of ten hours.

Renal calculus has already been mentioned as an indication for the incision of the kidney. The incision is, however, only practicable when there exists an expansion of the pelvis of the kidney in the shape of a bag. If the pelvis is only slightly expanded the incision of the kidney cannot be undertaken on account of the reasons discussed above. In such cases radical relief can solely be expected from extirpation of the calculous kidney. This operation is nevertheless of such danger as not to be underrated; and it is doubtful whether nephrolithiasis is such an important affliction as to justify one in undertaking a very dangerous

operation on account of it. In cases in which the calculus frequently causes renal colic, and in which there is also suppuration of the kidney, from time to time associated with fever, it cannot be doubted that an operation, even attended with danger, for the removal of the disease, is permissible; as the suffering not only tires out the life of the patients, but also diminishes their faculties and threatens their existence by chronic suppuration, extension of the disease to the other kidney, or by the obstruction to the excretion of urine. It has been feared (Rayer) that the kidney affected with stone would become so adherent to surrounding tissues, and especially to the peritoneum, that it could not be removed without perilous injuries to other parts, but the experience of Simon is opposed to this view. Another argument against extirpation arises from the difficulty of making an accurate diagnosis of the disease. Gunn (1870) was on the point of removing stones from a kidney, which he considered in that way diseased, by means of an incision. When, however, after exposing the kidney, he could feel no stones through its substance, he desisted from the operation. A similar thing happened to Durham. The latter surgeon undertook two years later, in the case of the same patient, whose disorder had returned, the extirpation of the kidney in question. The kidney, however, was proved to be normal. Peters extirpated a kidney which he considered diseased by stone, but which was proved to be tuberculous. These cases show how easy it is to be mistaken as to diagnosis in regard to nephrolithiasis. But it follows from Simon's experience that it is also a mistake to think that stones contained in the kidney can be felt after exposure of the kidney. Simon is even of opinion, judging from the condition of the exposed kidney, as described by Gunn, that in that case the kidney may have contained small stones. The diagnosis of nephrolithiasis can be sometimes fixed by palpation of the kidney through the wall of the belly or from the rectum. In this way one may succeed in feeling a morbid expansion of the pelvis of the kidney, or even a hard resistance in the pelvis of the kidney. If after pains about the kidney, and renal colic, and discharge of matter and blood, gravel is passed with the urine, there will no longer remain any doubt of nephrolithiasis, yet it will often be difficult to decide whether only one or both kidneys are diseased. If often-repeated colic has always occurred on the same side, it is very probable that the kidney of that side only is affected. The probability increases when nothing abnormal is detected by palpation of the other kidney. It becomes a certainty only when the urine once containing pus becomes normal during an attack of colic caused by impaction of the stone and obstruction of the ureter, and when pus reappears with the abatement of the colic.

After exposure of the kidney one can finally have recourse, for the purpose of diagnosis, to acupuncture (Simon). With a needle passed through the substance of the kidney into the pelvis of the kidney, making only a fine and entirely harmless prick, one would be able, it is presumed, should stones exist, to feel them. Only when, after a most careful examination, disease of the other kidney is excluded, should the extirpation of a kidney be undertaken. It will always be advisable, after the exposure of the kidney, to try once more whether one cannot perhaps reach the calculi by incision of the expanded pelvis of the kidney. Simon undertook, on August 8, 1871, the extirpation of a kidney affected with stone. He had previously convinced himself that only one kidney was diseased by observing that the urine during attacks of renal colic was normal. By palpation of the exposed kidney he could not feel any stone. The operation of removal was conducted without much trouble. Eighteen or twenty little stones were found in the extirpated kidney. After a favourable run to the twenty-first day, pyæmia set in, under which the patient (a female) succumbed on the thirty-first day.

Carcinoma and sarcoma, appearing mostly at an early age, are the new formations of the kidney which make an extirpation very desirable. As most of these tumours, however, can be recognized with certainty only after they have attained a considerable size, and as they then project much into the cavity of the belly, they cannot generally be extirpated through a limited incision, but only after opening the peritoneal cavity. One case, however, is known in which the removal was effected by an extra-peritoneal operation. Jessop extirpated (1877) from a child, two years of age, a large encephaloid tumour of the left kidney, projecting in the lumbar region, by means of a lumbar incision. On the fourth day after the operation the child was still going on well. Through a mistaken diagnosis of a hard, round tumour, situated among the muscles of the loins, Langenbuch was induced to perform an extra-peritoneal extirpation of the kidney; for the tumour proved an indurated kidney, striking superficially, situated between the muscles of the loin. The child recovered.

Lastly, fistulæ of the ureter, which cannot be cured in any other manner, also give an indication for extirpation of the kidney. A fistula from which urine flows continually is such a burdensome and tormenting complaint, that the female patients (for only females are troubled with fistulæ of the ureter) would rather undergo a dangerous operation than bear the discomfort any longer. After removal of the kidney the discharge from the fistula ceases as a matter of course. In such cases it is to be expected that the kidney is normal. This circumstance increases the danger of the operation, in so far as that an organ which has worked and performed its functions well up to the end is suddenly removed. Yet, on the other hand, the removal of a healthy kidney can be more easily performed, and performed too without injury to neighbouring tissues, than the extirpation of a diseased kidney. Simon, in 1869, extirpated a kidney on account of an otherwise incurable fistula of the ureter. The lady patient recovered. A patient, operated upon on January 8, 1879, for a similar reason, had completely recovered by February 12.

How the Operation is to be Performed.—The incision for exposing the kidney should be made at the outer edge of the sacrospinalis muscle—that is, about seven centimetres outwards from the line cutting the tips of the spinous processes, and parallel with it—extending from the lower edge of the eleventh rib as far as the middle of the space between the twelfth rib and the crest of the ilium. Then the incision is to be deepened between the lower edge of the twelfth rib and the lower angle of the wound by cutting at first through the latissimus dorsi, and thereby exposing the posterior layer of the lumbar fascia. On dividing this layer of fascia the lateral edge of the sacrospinalis muscle will appear, and is drawn inwards by means of a blunt hook, facilitating this displacement of the muscle, if need be, by the use of the knife. After drawing inwards the muscles, the layer of fascia forming the anterior part of the sheath of the erector spinæ is exposed, and has to be divided in the whole extent of the wound. Thereupon the quadratus lumborum lies before the surgeon. Between this fascia and the quadratus muscle the last intercostal and first lumbar arteries run, and have to be divided and ligatured. If also the quadratus lumborum is cut through as well as the fascia covering its front surface, one comes upon the fatty capsule of the kidney. Between the quadratus lumborum and its fascia, the last dorsal and first lumbar nerves come into view and cannot be spared. Klineberger advises that the incision for exposing the kidney should be curved, with its convexity upwards and inwards, beginning a little below and behind the free end of the twelfth rib, and ending at the outer edge of the sacrospinalis in the middle of the space between the twelfth rib and the crest of the ilium. By this arrangement he thinks it possible to spare the last dorsal and frequently also the first lumbar nerves.

If it is intended only to incise the kidney after exposing it—that is, should the kidney be enlarged owing to expansion of its pelvis—it is easy to feel through the incision, and the kidney cannot possibly be missed. After the fatty envelope is cut through, the kidney lies exposed, and should be incised at a point where the wall of the pelvis is very thin. Only a small incision should be made at first, and afterwards it should be dilated, if possible, with blunt instruments. If an abscess of the kidney has to be opened, one must proceed in a similar manner. If calculi are found in the opened pelvis of the kidney, they should be extracted by the fingers or forceps. If the calculi are too large or too knotty to be extracted thus, they must be crushed in the opened kidney by means of a lithotrite. Callender proceeded in this way in a case which, it is true, finally ended in death. In most cases it will be advisable to keep the incised wound into the kidney open for some time by means of an India-rubber drainage-tube.

If exposure of the kidney has been undertaken for the purpose of its extirpation, a palpable swelling does not exist, as a rule, which would guide the way to the kidney. The latter can therefore be missed if one deviates from the direction which leads straight to the kidney. It is therefore of importance to remember that one is sure to come down upon the kidney at the place where the lower edge of the twelfth rib crosses the lateral edge of the musculus sacrospinalis. In all deeper dissection one must therefore proceed from the point indicated. In most cases the kidney can be distinctly felt after cutting through the quadratus lumborum. After laying open the fatty layer surrounding the kidney, attention must be given to the difficult task of loosening the kidney from its fatty envelope. This has to be done very carefully with the finger. At first an attempt should be made to isolate with one or two fingers the lower part of the kidney, which is *in situ* at the wound; having succeeded in that, the kidney should be pulled upon at its lower end by the first three fingers, and the upper part should be drawn out from under the ribs, whilst the fingers, which by degrees carefully free the kidney, are gradually pushed forwards.

The fatty envelope cleaves the firmest to the ends of the kidney, and one must therefore be particularly careful when dealing with them; perhaps even it will be well to have recourse to the knife or scissors. If the kidney has been loosened from its surroundings, and its upper part pulled out from under the arch of the ribs, it can be raised so far from out the depth of the wound that one can easily reach its hilus and there ligature the vessels of the kidney. This is best done by several ligatures placed round the pedicle of the kidney after the fatty envelope has been stripped off either with the fingers or forceps. It is better also to tie the pedicle in two portions by passing a curved aneurism-needle armed with a double thread through the middle of the pedicle, taking care to avoid the vessels, and tying each part separately. The employment of two ligatures has, besides, the advantage that, if one of them slips, the parts can be drawn up to some extent by the other.

After ligaturing the pedicle the kidney is cut away, leaving, however, enough of the pelvis of the kidney to prevent the ligature slipping. The operation is then completed. In the depth of the wound the peritoneum can now be seen to heave up and down with each movement of respiration.

If special difficulties should arise whilst loosening the upper part of the kidney, and in pulling it from under the arch of the ribs, either on account of adhesions or of the high position of the kidney, it will be advisable to make the upper part of the kidney more accessible by resecting a piece of the twelfth rib about four centimetres in length. This has, however, to be performed with great care, in order to avoid causing an injury to the pleural sac, which reaches down as far as the upper edge of the twelfth rib. In any case, all the soft parts have to be

separated quite close to the rib. The pulling down of the kidney can be facilitated by laying hold of it with a strong pair of forceps. If one considers it practicable, after exposing the kidney, to proceed at first to ligature its vessels, one must pass the fingers on, after incising the fatty envelope, over the median edge of the kidney to the hilus, and isolate and surround with a thread the bundle of vessels which can be easily felt as a compact cord. This proceeding has its particular difficulties, owing to the inaccessibility of the pedicle. If the ligature be tightly tied, it will be best to cut off the vessels with a pair of scissors, leaving a part of the pelvis of the kidney attached to them. Afterwards the extraction of the kidney is undertaken and completed by cutting away the ureter. In those cases in which the extirpation of the kidney is indicated, and the kidney is firmly adherent to its surroundings, Simon proposes to peel out the kidney from its fibrous capsule, and to ligature the vessels within the capsule at the hilus.

The antiseptic precautions applied during the operation, as well as in the after-treatment, will have great importance as regards the result or extirpation of the kidney. Even injuries to the peritoneum during the extraction of the kidney will, it is presumed, not essentially increase the danger of the operation under this treatment. During the first four or five days after the operation, anything pressing upon or interfering with the wound which might produce bleeding must be prevented as far as possible. The bowels therefore must be thoroughly emptied before the operation; opium and a low diet prescribed in the first days afterwards. The catheter must be used if necessary.

The extra-peritoneal extirpation of the kidney had, up to the time of writing, been undertaken eight times. In two cases the patients recovered (Simon, Langenbuch); four cases ended fatally (Simon, Bruns, Peters, Durham); of one case (Jessop's) the issue remained unknown; in the case of Zweifel the condition of the patient after a lapse of four weeks was very favourable. The two operations of Simon lasted about forty minutes each, that of Bruns almost two hours. The extraction of the kidney from its fatty capsule was always the part of the operation which was not only the most difficult, but which also required the most time. In the case of Bruns, the removal was not entirely completed in spite of the resection of a piece of the twelfth rib. In the extraction of a calculous kidney, undertaken by Simon, the fibrous capsule of the kidney tore a little. Zweifel found the kidney inseparably connected with the fatty capsule, and had therefore to peel it out (unhusk it) from its fibrous capsule; the kidney itself was so soft and crumpled that Simon could only with difficulty recognize it as such. Simon did not succeed in his first case in tying the pedicle in two parts, because the veins could not be distinctly recognized on account of the traction on the pedicle, and an injury of the veins had to be feared. In spite of ligaturing the pedicle, bleeding occurred in both of Simon's cases after cutting away the kidney, and could not be checked after the pedicle had been again ligatured.

In the case just mentioned, persistent vomiting for a time continued after the operation, which, however, could not be referred to the disturbances to the secretion of urine, but only to the influence of the chloroform. The normal quantity of urine in Simon's female patient, from whom a healthy kidney was extirpated on account of fistula of the ureter, was discharged on and after the fourth day.—*Med. Times and Gazette*, Oct. 16 and 23, 1880.

A Case of Aneurism of the External Carotid, in which, after failure of the Ligature of the Common Carotid, the Old Operation was performed successfully.

Mr. Henry Morris, at a recent meeting of the Royal Medical and Chirurgical Society (*British Med. Journal*, Oct. 30, 1878), reported the following interesting case:—

Elizabeth P., aged 45, first came under Mr. Morris's care on May 20, 1879, with an aneurism about the size of a walnut at the level of the hyoid bone, and just above the bifurcation of the right common carotid artery. It had been noticed eight months, and it was growing. It was not the result of any injury. She complained bitterly of the pain it caused all over the right side of the head and neck, and of a distressing feeling of dryness about the throat and fauces. She could swallow nothing solid without great suffering; her voice was hoarse, and she spoke in rough whispering tones. Her sight and taste were unaffected. Digital and instrumental compression could not be borne. Diet and medicinal treatment were resorted to, but, her symptoms becoming rapidly worse, on July 16, a catgut ligature was placed around the common carotid artery, on a level with the omo-hyoid muscle where it crosses the cervical sheath. Four hours and a half afterwards, faint pulsation returned in the aneurism, and continued more or less marked till August 12; when the outline of the aneurism was quite lost, though some pulsation could still be felt along the line of the artery in the situation of, and for a little distance below, the seat of the aneurism. A sinus remained leading down to the point of the ligature, hard, and surmounted with exuberant granulations, from which blood occasionally was discharged. At the end of September, fresh swelling took place at the angle of the jaw; there was no pulsation in it, but, with this exception, all the old symptoms returned. On October 30, there was evidence of suppuration; an incision was, therefore, made, and a small quantity of pus was evacuated from the surrounding tissues. Relief was again obtained, but only partially and temporarily. Though the sinus over the ligature now closed, a similar one, from which blood occasionally escaped in small quantity, remained in the centre of the late incision.

At the end of November, pulsation again was felt; and the swelling, which had much subsided after the escape of the pus, again increased. In fact, the aneurism had now evidently ruptured, was inflamed and growing largely, and threatened to set up ulceration of the tense and distended skin. It was, therefore, treated in the following manner. The facial and superior thyroid arteries were first ligatured, and then the sac was laid open, and all clots turned out. It was now seen that all the bleeding was issuing from the distal end of the sac, and could be checked by passing a tenaculum underneath it and raising it. The incision was prolonged upwards sufficiently far to enable a silk ligature to be passed around the vessel beyond the sac; and, in doing so, a small artery (probably the occipital) and vein were cut, from which bleeding, easily controllable, occurred for the moment. It was specially noticed that no blood had been passing into the sac from the internal carotid, yet that no clot was prolonged into it from the common carotid. The wound did well; the ligature separated on the seventeenth day; convalescence was retarded by an attack of quinsy, which, in the right tonsil, ran on to suppuration; but the patient had quite recovered by February 12, 1880, and still remained well.

Mr. Morris said that the return of the pulsation in the aneurism a few hours after the application of the ligature, the slow consolidation of the aneurism, the pulsation in the vessel on the proximal side of the sac, though not immediately above the ligature, the subsequent growth of the aneurism in spite of the complete obliteration of the common carotid, the violence of the hemorrhage from the distal orifice of the sac at the time of the last operation, together with the absence of any bleeding from the internal carotid, proved how important a part the free anastomoses between the branches of the external carotids of the two sides of the neck, and between the branches of the external carotid and subclavian of the affected side, played in aneurism near the bifurcation of the common carotid. It was suggested, and well-known cases and dissections were quoted to support the

suggestion, that, after ligature of the common carotid, no blood usually continued to reach the lower end of the internal carotid in the neck; and that, therefore, the anastomosing circulation within the skull was not the cause of the return of pulsation in these aneurisms, and, therefore, not a cause of the failure of the ligature. The practical conclusion arrived at was that, if the Hunterian ligature were employed in these cases, it were best to supplement it by the simultaneous ligation of such branches of the external carotid as were easily accessible, viz., the temporal, facial, and superior thyroid.

Dr. Hilton Fagge said that he had met with a case which seemed to confirm Mr. Morris's opinion. A man was admitted into Guy's Hospital with aneurism, and was also hemiplegic. The common carotid artery was tied, and the hemiplegia soon afterwards disappeared. He died some time afterwards; and Dr. Fagge found, on *post-mortem* examination, an aneurism of the common carotid about as large as a pigeon's egg, and containing coagula; it pressed upwards on the internal carotid. There had been evidently interference with the flow of blood upwards to the brain; and, after the operation, the cerebral circulation had been restored by the collateral circulation through the external carotid.

Mr. Harrison Cripps asked why, if the diagnosis, before operation, of aneurism in the external carotid artery were correct, the common carotid had been tied as low down as the omo-hyoid muscle. There was a great mortality after ligature of the common carotid, caused principally by the interference with the circulation in the brain. He thought that a ligature might have been applied to the external carotid, between the aneurism and the common carotid. If the internal carotid were patent in Mr. Morris's case, he did not see why blood did not flow down from it. Considering that there was a violent flow of blood from the distal end of the artery after opening the sac, he thought that the preliminary ligation of the collateral branches was useless. If the object were to cut off the supply of blood through the peripheral branches, he thought that it would be more effectual to tie the carotid of the other side.

Mr. Holmes said that the case reminded him of one in St. George's Hospital, of ligature of the external iliac for supposed aneurism of the common femoral artery. The aneurism ran exactly the same course as in Mr. Morris's case; and it was so much like a malignant tumour, that the diagnosis was difficult. Local pressure was applied successfully; and the patient died some time afterwards of some other disease. The preparation, which was preserved in the museum of St. George's Hospital, showed the establishment of the collateral circulation. Local pressure would, of course, have been impossible in Mr. Morris's case. Mr. Cripps's question as to the situation of ligature was answered by the fact that the aneurism was close to the bifurcation of the artery. He agreed with Mr. Morris that additional security was gained by tying the main collateral arteries. The diagnosis between aneurism of the external and of the internal carotid arteries was difficult. The regurgitant circulation through the internal carotid was not always so powerful as some supposed.

Mr. Christopher Heath said the suggestion of tying the peripheral branches was admirable, if it could be carried out; but, if only one branch were left, there might be a return current of blood. He thought that it was very difficult to tie all the branches of the external carotid artery. After ligature of the artery on the proximal side, galvanism or the injection of the perchloride of iron into the sac might be tried, before the collateral circulation had been re-established. He did not see the use of tying the carotid on the other side.

Mr. Hulke believed that the injection of perchloride of iron was not safe, unless pressure could be applied on both sides of the sac. He had some years ago made a number of experiments by injecting the perchloride into the veins of dogs, and had found that if pressure were not applied, two drops caused death.

Mr. MORRIS said that, although it might not be possible to tie every branch of the external carotid, yet the diminution of the supply of blood by the ligation of some of them put the patient in a better position. With regard to the use of perchloride of iron, there was a coagulum in the sac in his case, but it was interfered with by the whirl of the returning blood; and the object was to prevent this interference. The recurrent pulsation soon after ligature could be explained by the flow of blood through the branches of the external carotid. Although the results of ligature of the external carotid artery were very favourable, it was impossible to perform that operation in his case.

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On Colles's Fracture.

We have noticed, in the number of the *Dublin Journal* for June, 1880, a somewhat interesting paper read before the Ulster Medical Society on February 8, 1880, on the above subject, by Dr. HENRY O'NEILL, assistant surgeon to the Belfast Royal Hospital. Dr. O'Neill is a warm partisan of Dr. Gordon's method of treatment in this injury, and he also shares the views which are prevalent among Irish surgeons as to the absence of impaction in Colles's fracture. It is in relation to the latter point that a strange discrepancy occurs between our Irish *confrères* and the surgeons of Great Britain and the continent; for, while English, Scotch, French, and other surgeons generally believe that fracture of the lower end of the radius is very commonly impacted, the surgeons of Ireland seem to make it almost a personal matter to prove that this is not the case. Dr. R. W. Smith, in his valuable work published in 1850, strongly combats the notion of impaction, and in this he is supported by Dr. Gordon; and Dr. O'Neill adopts the same view, chiefly, however, from *à priori* considerations of the mode of production of the fracture, and from the condition of parts in fractures produced on the dead subject. The fracture, says Dr. O'Neill, "is usually caused by falling on the palm of the hand, with the wrist violently extended; the anterior common ligaments and flexor tendons, being forcibly stretched, act on the anterior border of the carpal surface of the radius at right angles to its long axis, forcing it backwards, so that the radius breaks almost transversely, or with a variable degree of obliquity from before backwards and upwards."

With reference to this, we would say that this, like most of the mechanical explanations of the mode of production of fractures, is, to our minds at least, extremely dubious—and that the fracture seems more probably to be in most cases produced by the transference of direct force from the palm of the hand to the lower end of the radius, a mode of production very likely to cause impaction; while, if the end of the bone is, as Dr. O'Neill imagines, torn away from the shaft by the tension of the ligaments and tendons, impaction would doubtless be less probable, though even then by no means impossible.

With regard to the non-occurrence of impaction in fractures produced on the dead subject, we cannot attribute very much importance to this; since the conditions are so different. But what has always surprised us is that the Irish writers on this subject should persist in ignoring Mr. Callender's evidence, which is positive as to the existence of impaction in three recent specimens dissected at St. Bartholomew's Hospital, as well as other recent specimens preserved in the Museums of the London and Middlesex Hospitals; and this is the more remarkable since Professor Smith, writing in 1850, asks for the very evidence which Mr. Callender produced in 1865 (*St. Bartholomew's Hospital Reports*, vol. i. p. 283.)

Here are Smith's words, quoted by Dr. O'Neill in this very paper. "Until the result of the examination of recent specimens can be adduced in support of the theory of impaction, I shall be inclined to believe that the impaction is only

apparent, and that the compact tissue of the shaft is not found enveloped in bone, from its having penetrated the lower fragment at the time of the occurrence of the injury, but because it becomes subsequently encased in osseous matter during the process by which the bony union of the fracture is accomplished."

In reply to this challenge, Mr. Callender produces the notes (and in two cases refers to the preparations) of these instances in which this fracture was dissected in the bodies of persons who had died of other injuries a few hours after the accident, and found to be impacted. Yet the evidence seems not to be satisfactory; at least it is quietly ignored.

Dr. O'Neill does, indeed, admit that when the lower end of the radius is broken by a fall on the back of the wrist, impaction does occur. But any reader of Mr. Callender's paper can see that that careful and accurate writer had distinguished between this less common form of Colles's fracture and the ordinary cases, to which latter class all three above-mentioned belonged. Mr. Callender shows that the direction of the impaction is found to vary with the direction of the force, as it naturally would; we cannot therefore avoid subscribing to the belief of those who admit the frequent occurrence of impaction in this injury. The question is one of considerable importance in the treatment. For, to those who believe in impaction, the point of chief moment is that such impaction should be if possible disengaged, and the parts put in a perfectly natural position, at the time of the injury. This is usually not difficult. "The deepest impaction," says Mr. Callender (meaning the deepest he has met with among the specimens in various museums), "does not exceed five-tenths of an inch, usually it is much less," so that firm traction under anæsthesia would properly disengage the fragments in any case where they could not otherwise be brought into apposition; and we believe that, when the parts are thoroughly reduced at first, the injury may be very successfully treated by straight back and front splints. We say this with no hostility to Gordon's splint; in fact, we believe with him that the great essential of successful treatment is to restore the proper concavity of the front surface of the lower portion of the radius; and, so far as Gordon's splint insures this end, it is of value. But accurate reduction necessarily involves the restoration of the natural shape of the bone—and it is difficult to see what there is to displace the lower end again when once it has been reduced and is kept quiet. We repeat that personally we have a high opinion of Dr. Gordon's splint, and have used it successfully; but we feel that a too exclusive trust in this or any other form of apparatus has some tendency to lead the surgeon astray from what ought to be his first and great object—the accurate reduction of the parts at the earliest possible moment, and by the exertion of any necessary amount of force which seems justifiable.—*Lond. Med. Record*, Oct. 15, 1880.

Cross-Legged Progression (Scissor-Legged Deformities) the Result of Double Hip-Anchylosis.

Mr. Clement Lucas, at a recent meeting of the Clinical Society of London (*Med. Times and Gazette*, Oct. 30, 1880), read a paper on cross-legged progression (scissor-legged deformities) the result of double hip-anchylosis. The object of the paper was to direct attention to a peculiar and characteristic gait brought about by anchylosis of both hip-joints, and hitherto undescribed. Two patients were exhibited to illustrate the cross-legged mode of walking, one a boy aged ten, and the other a man aged forty-seven. In each case the disease had existed for some time in one hip-joint before the other had become affected. Gradually, as the patient walked with the aid of sticks or crutches, the limb last attacked was carried across the other, and becoming anchylosed in this position, compelled the patient to walk permanently cross-legged. The legs placed in this

position suggest in their crossing the appearance of a pair of scissors. The author left it open to discussion how this position was acquired—whether as the simple result of the adduction which is so common a sequence of hip disease, or as the gradually developed, perhaps unconscious, action on the part of the patient to place his limbs in the position most favourable for progression. Mr. Lucas gave the following explanation as the most practicable. The patient, when commencing to walk on the convalescent limb, finds that by resting the other limb upon it he can steady the inflamed hip, and prevent the movements which cause him pain. At the same time, by the oblique position the limb is shortened and rendered less liable to touch the ground. As recovery goes on in the hip last attacked, the patient from time to time tests its condition by dropping the supported foot to the ground and leaning a little weight upon it. Gradually he takes more and more weight from the crutches, still retaining the limb in the oblique position, and finally, the second hip having become anchylosed, he is able to throw aside his crutches and walk in the peculiar manner illustrated by these two patients.

The author showed that in ordinary walking the forward movement takes place entirely from the hip, the knee-movement being of service only to shorten the limb and prevent the feet touching the ground when in the act of being advanced. Hence, should both hips become fixed when the limbs are parallel, progression could only take place by twisting first one side of the body, then the other, to the front. The patient finds out for himself that by carrying one limb across the other, so as to render the knees oblique, the knee-movement can be made to take the place of hip-movement, and knee-walking is thus substituted for hip-walking. In both the patients exhibited, the right leg (that last attacked) was in advance of the other.

The first patient, a boy aged ten, began to suffer from disease of the left hip when four and a half years of age, and attended as an out-patient at the Evelina Hospital under Mr. Lucas's care. Fifteen months later, after a fall, the right hip became diseased. He continued under Mr. Lucas's care till June, 1877, when he was admitted into the hospital under the care of Mr. Morrant Baker. After resting in the hospital three months he was discharged, and again attended as an out-patient. For twelve months after his discharge he was kept lying during the greater part of the time; he was then allowed to walk with crutches, the left hip being, however, anchylosed. He was then sent into the country, and on his return it was found that he had learnt to walk with both legs, and that they were fixed in the scissor-like position.

The second patient exhibited, Mr. Lucas saw walking in the street, and diagnosed his condition by the light of the other case. A man, aged forty-seven, first began to suffer pain in the left hip in the year 1870. He was at this time employed as a coal-heaver. He sought advice at St. Thomas's Hospital, and afterwards at St. Bartholomew's. Subsequently he spent thirteen months in the Dalston Infirmary. After this, for a year, he tried to work a little, but remained lame. Since that time he has gained his living by hawking trifles in the streets. In September, 1879, he began to suffer pain in his right hip. Up to this time it had been his custom to rest most of his weight on his limb, but the pain now caused him to stand chiefly on the left leg. In the course of the winter he got into the habit of crossing his legs, but at first was able to unlock them at will. Later he used to unlock them at night-time, when he retired to sleep; but gradually this became more difficult, and they are now firmly fixed in the cross-legged position.

Mr. J. Croft said that among the cases of excision of the hip which came under his care last year he had had one which was double. This ended in recovery; but the mode of walking was different from that here presented; the con-

ditions also were different. The patient walked with one knee in front of the other, and there was some lordosis. Much improvement was effected by cutting through the femur on one side and breaking through the adhesions on the other. All cases of double hip-joint disease, however, did not end like these. In the child exhibited there had probably been a double dislocation; and so likewise in the man. He thought the best plan of affording relief would be to cut through both femurs below the great trochanter.

Mr. HOWARD MARSH said that such cases may and ought to be cured without displacement. The cause of the peculiar gait in the man was that his limbs had been allowed to go wrong. And the tendency to displacement should have been obviated by splints and weights. The man did not walk in that peculiar fashion because he had had hip disease, but on account of the position the limbs had been allowed to take. He would cut the femurs.

Mr. LUCAS, in reply, said that the scissor-like position was assumed so that the knee-joint might be used after the manner of the hip-joint. In reply to Mr. Heath, he said he did not think there was dislocation in the man.

Medical Jurisprudence and Toxicology.

An Epidemic of Ergotism.

This epidemic, described by SWIATLOWSKY (*St. Petersburg. Medic. Wochenschr.*, 19th July, 1880) occurred during the autumn of 1879 in the neighbourhood of Novgorod. In the district attacked, an inhospitable climate and a marshy soil were combined with poverty, dirt, and generally unhealthy conditions among the villagers. Of nineteen cases in which the symptoms were strongly marked, four died. In other sixteen cases the symptoms were less developed, and probably as many more escaped observation. In these slighter cases the symptoms were diarrhœa (in seventy per cent.), weakness, more especially in the hands and feet, occasional attacks of giddiness, headache, sleeplessness, and deadness of the fingers, with formication under the skin. All had, up to their seizure, eaten fresh-ground unkilned rye, and the symptoms quickly disappeared under the use of laxatives and opiates, and the withdrawal of bread containing ergot. In the first-mentioned nineteen cases the symptoms were severer: racking pains in the extremities, severe headache, great thirst and utter prostration, with weakness of intellect and melancholia. Tonic and clonic spasms preceded by dyspnœa, deadness in the extremities, and cold sweats, attacked the flexor muscles of the limbs, the extensors being unaffected. In no case did gangrene occur. The respirations were 14.16; maximum temperature 99.8 deg., minimum (in three cases) 95.9 deg.; pulse slow and weak. The fatal cases, an old man and two children in one family and a woman in another, died, three of them in a comatose condition and one during a convulsive fit. The treatment was as above, with subcutaneous injections of morphia, and inhalations of chloroform, followed by tonics and improvement of hygienic conditions. The quantity of ergot present in the rye was about seven per cent., and two dogs fed with it each showed on the seventh week a gangrenous ulcer on one paw. On withdrawal of the ergot-bread from one dog, recovery followed in two months; while in the other, fed as before, the gangrene advanced, convulsions appeared, and death followed by way of coma in the tenth week. The *post-mortem* appearances were: brain and meninges anæmic, arteries quite empty, veins full of dark fluid blood, heart empty, lungs, liver and spleen hyperæmic, intestinal mucous membrane congested, but neither it nor the liver showing any gangrenous spots such as have been described.—*London Med. Record*, Oct. 15, 1880.

MEDICAL NEWS.

Privileged Communications.

A movement is on foot, and has received the sanction of a very large majority of the medical profession in Pennsylvania, to procure from the State Legislature the passage of a law extending privilege to communications between physicians and their patients. Such a law, wisely framed, is for the advantage of the whole public as well as of the special class concerned in it, and that it is eminently desirable that it should be placed upon the statute-book, may be readily perceived by any one who will look into the matter.

From the peculiar circumstances under which physicians are apt to be admitted to the private lives of their patients, many things must accidentally fall under the notice of the former, and others are often imparted to them, not in their professional capacity, which they justly regard as a point of honour to keep under the seal of confidence. This principle was distinctly recognized in the time of Hippocrates, and in the Code of Ethics of our own day it is clearly set forth. While, however, matters of this kind are not to be even spoken of under ordinary circumstances, they do not come within the compass of the law now sought.

The idea of this movement is to protect the physician or surgeon and his patient in such communications as their mutual relations may demand; that whatever it is needful for the former to know in order to the intelligent treatment of a case, the latter may reveal without fear of its subsequent exposure. It is of the utmost importance that the patient should be free to place such confidence in his medical adviser, and to put him in possession of all the information needed for the due discharge of his functions; and that the physician on his part should be equally free in inquiring into all points bearing upon the proper understanding and management of the case. For want of such facts, the treatment instituted may be either inefficient or wholly erroneous.

Custom, if not law, has everywhere recognized the secrecy of the confessional, and lawyers can plead privilege against any attempt to elicit from them the statements made to them by their clients. Obviously, the same reasoning which has led to this exemption of the clerical and legal professions, applies with equal force in the case of the medical. There is an old maxim to the effect that a man should have no secrets from his priest, his lawyer, or his doctor.

It should be understood that if the physician goes outside of his province, he at once goes outside also of the protection which the proposed law

would give him. He becomes then, in regard to all other matters, an ordinary witness, and as such may be called upon to give up the facts in his possession to the proper authorities.

That the proposed law for Pennsylvania will work greatly to the advantage of the profession and relieve us from many serious annoyances and embarrassments we can readily understand. That it will not injure the public we also believe, upon one condition, viz., that one word be stricken out.

The draft of the law reads as follows: "No person duly authorized to practise physic or surgery shall be allowed or compelled to disclose any information which he may have acquired in attending any patient in his professional character, and which information was necessary to enable him to prescribe for such patient as a physician, or to do any act for him as a surgeon," and the word we object to is "allowed." To say that a medical man who becomes cognizant of murder, abortion, or other crime, shall not be "compelled" to disclose such a confidential communication is very well. But if the circumstances surrounding the case seem to him as a good citizen to compel him, as a matter of conscience and duty, to bring such wrong to the attention of the proper prosecuting officer, who forsooth has the right to say he shall not be "allowed" to do so? Least of all has the public who suffer from such crimes. Especially is this true of abortion, which even with existing laws is so rife. Gladly will the doctor aid in protecting any poor deceived girl who may be rescued from a life of future infamy by his refusing to be "compelled" to disclose the facts; but if he see that her life is sacrificed and that through his silence the wrongdoer and the abortionist are to escape the punishment which the good of society demands, it is not only a violation of his personal liberty of conscience and his rights as a good citizen to shut tight the only mouth, it may be, that can convict the criminals, but all of our sense of right revolts at such an enforced silence.

Many reasons make such a prohibition proper for the lawyer. But while it is contended that "legal custom has forbidden any interference between a penitent and his priest," the *law* is, that the priest, if it be insisted on, must disclose the facts or suffer the consequences. Hence, if the law protects medical men from being "compelled" to testify, it will protect us even more than it does the clergy, and with this we may well be satisfied without enforcing silence on unwilling consciences to the detriment of the community.

The satisfactory working, for a greater or less period, of similar laws in Arkansas, California, Indiana, Michigan, Iowa, Missouri, Minnesota, New York, and Wisconsin, may be appealed to as practical proof that the action now asked for at the hands of the Legislature of Pennsylvania would be in furtherance of the public interest. Especial stress is needed on this point, since the fact that the matter has been agitated by the medi-

cal profession might at first sight give the idea that the enactment was desired by them only and for their sole benefit.

We trust that this effort to obtain salutary protection for the medical men of this commonwealth and their patients may be favourably met by the law-makers, and should be glad if the mention of it in these pages should induce similar action in other States.

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Literary Piracy.

Most of our readers are familiar probably with the "American Health Primers," published within the past eighteen months by Mr. Presley Blakiston, of Philadelphia. We should be glad to learn that they had been so esteemed as to lead to their republication in England, were it not for the fact that in doing so the English publishers, Messrs. Ward & Lock, have seen fit to commit an act of the grossest injustice. They have announced thus far six of the series, of which we have seen but four, and can therefore only speak of these. The chief wrong they have done is to omit entirely the names of both editor and authors, and announce the series as "written and edited by distinguished members of the medical profession," thus misleading the British public into the belief that the books are of European and not American origin. And to carry out still further this deception, they call them "Ward & Lock's Long Life Series," as though it were an independent and original publication. And, still further, in cases where the text would discover the American origin of the book, whether by direct statement or by allusion to cis-Atlantic customs, statistics, men, and manners, they have indeed "carefully edited" them by changes and omissions. In Dr. Harlan's and Dr. White's Primers only one sentence in each needed alteration, in Dr. Cohen's perhaps a dozen, while in Dr. Richardson's a couple of score of changes are made—not to add to the value of the books but to conceal their American origin.

We wish we could say that the republication of the "American Health Primers" redounded as much to the honour as it does to the literary discernment of the English publishers. As it is it is piracy in its worst form, and swift condemnation should follow its exposure.

—

Gift of Harvey Memorials.

At the November meeting of the College of Physicians of Philadelphia, Dr. Weir Mitchell presented to the College some very interesting Harvey memorials which he collected during his recent visit to England and to the grave of Harvey, in the village church at Hempstead about seven miles from Saffron Walden in the county of Essex. In his visit to Hempstead Dr. Mitchell was accompanied by Dr. Benj. W. Richardson, of London, who has been principally instrumental in recalling to public notice the tomb of the great anatomist.

Dr. Richardson in early life (1847) was assistant to the surgeon at Saffron Walden, and while attending a neighbouring cottager's wife in her accouchement her husband entertained him with an interesting story of the chapel and vault of the

"great Dr. Harvey." It gradually dawned upon Dr. Richardson that the Harvey referred to must be the discoverer of the circulation of blood, and on further inquiry this proved to be the fact. Up to that time the Harvey vault had not been visited by men of science within the memory of any of the surrounding inhabitants, and it had been long neglected and had fallen sadly out of repair. The villagers knew that Dr. Harvey was a celebrated man, who belonged to a distinguished county family, and had made some great discovery, but they did not know what it was. Dr. Richardson subsequently visited the vault and through his influence it was repaired and public attention called to the resting-place of the remains of the great Harvey.

In 1878, Dr. Richardson, with a photographer, made a visit to Harvey's tomb at Hempstead, and took a series of six photographs, copies of which Dr. Mitchell procured, had framed, and with fac-simile tracings of the inscription on the monument and on the sarcophagus of Harvey presented to the College. Two of these photographs represent different views of the exterior of the church, which dates back to the reign of Henry the Seventh, and one of its interior with the Harvey chapel, a handsome little annex over the Harvey family vault in the northeast corner of the church. Two others represent the front and profile view of the marble tablets or monument containing the bust of Harvey which is erected in the church. The ornamentation of the tablet is bold and effective, and below the bust is a lengthy and appropriate Latin inscription, a fac-simile copy of which Dr. Mitchell obtained by rubbing on tracing paper. A careful study of this bust which Dr. Richardson made in connection with Mr. Woolner, a sculptor and Royal Academician, led him to the belief that it was copied from a cast made after death, and that it was done with true artistic delineation, but that all that he was obliged to add to make up the bust as it stands, as for instance the ears, hair, drapery, etc., is of the worst possible quality.

The concluding photograph of the series is a view of the vault and of the sarcophagus containing the remains of Harvey which was obtained by the aid of the magnesium light. The leaden case or sarcophagus is represented as roughly shaped in the form of the body. The head has the rude outline of a face with mouth, nose, and eyes; the body is long and tapering towards the feet. The breast plate is broad and the inscription on it is in raised letters: "Docter William Harvey decesed the 3 of Ivne 1657, aged 79 years," a fac-simile copy of which Dr. Mitchell obtained by rubbing.

In accepting the gift of these interesting Harvey memorials the College voted its thanks to Dr. Mitchell.

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Pulverization of the Bromides in Pertussis.—The good effects of bromide of potassium are well known, and, according to Dr. Wintrebert, the way to render this medicine still more useful is to bring it in direct contact with the respiratory passages by pulverization. He habitually employs the solution of 20 per cent. after each paroxysm, this having cleared away the mucosities so as to enable the remedy to gain direct access to the mucous membrane.—*Med. Times and Gaz.*, Oct. 30, 1880, from *Presse Belge*, Oct. 17.

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The German Pharmacopœia.—The Imperial Government of Germany has appointed a commission, which has already commenced its sittings at Berlin, for the revision of the German Pharmacopœia. The commission consists of twenty-seven members, of whom sixteen are professors from various universities, five are apothecaries, and the remaining six are eminent practising physicians or surgeons. The Prussian War Office has deputed two military doctors and a military apothecary to attend the sittings. Dr. Schmidt, Professor of Pharmacy at

the University of Halle, will act as secretary to the commission, which is presided over by Privy Councillor Dr. Struck, director of the Imperial Sanitary Department.—*Lancet*, Oct. 23, 1880.

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Angels in the House.—In the last fasciculus of the *Bulletins de la Société d'Anthropologie de Paris* (tome iii, fasc. 2), M. Bertillon gives the results of his comparative analyses of the statistical tables of suicides for France and Sweden. These results show singular accord between the two countries, and the author considers himself justified in maintaining that they establish the two following laws. 1. Widowers commit suicide more frequently than married men. 2. The existence and presence in the house of children diminishes the inclination to suicide both in men and in women.—*British Med. Journal*, Oct. 30, 1880.

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British Medical Association.—The Council have decided that next year's meeting of the Association shall be held at the Isle of Wight, on account of its accessibility to the distinguished foreigners who may attend the International Congress in London in 1881. Mr. Benjamin Barrow, of Ryde, has been appointed President-elect.

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The Weir Mitchell Library Fund of the College of Physicians of Philadelphia.—At the November meeting of the College of Physicians, Dr. Alfred Stillé, Chairman of the Library Committee, reported that he had received from Dr. Weir Mitchell a check for one thousand dollars, the income from which was to be applied to subscriptions to current periodicals or to such other use as the Library Committee might direct. The College passed a vote of thanks to Dr. Mitchell for his generous gift, and directed the treasurer to invest the same, and to keep a separate account of it as the "Weir Mitchell Library Fund," and to pay over the income to the Library Committee in accordance with the terms of the gift.

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Southwest Virginia Medical Society.—A meeting of physicians of the 9th congressional district of Virginia was held at Marion on the 17th of September to organize the Southwest Virginia Medical Society. Dr. S. C. Gleaves, of Wytheville, was called to the chair. It was resolved to effect a permanent organization, and Dr. W. F. Barr, of Abingdon, was elected President, and John S. Apperson, M.D., of Smyth, Recording Secretary and Treasurer. Meetings are to be held quarterly, and the first stated meeting was held at Marion on the 28th of October, and the permanent organization was completed.

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Break-bone Fever in Charleston.—The break-bone fever which prevailed in Charleston during the autumn has disappeared with the advent of cold weather and frost. From the *National Board of Health Bulletin*, Nov. 6, 1880, we learn that break-bone fever at the same time prevailed extensively in Northern Egypt, which corresponds in geographical latitude with the Gulf Coast of the United States, where it also existed. The isothermal difference is about ten degrees.

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Physicians in Chicago.—According to the *Register*, just published, under the direction of Dr. D. W. Graham, there are 409 regular physicians in Chicago who are in affiliation with the Code of Ethics of the American Medical Association.

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Smallpox in Chicago.—Smallpox is on the decline in Chicago; 177 cases have been treated in the hospital from January 1st to October 1st, of which 30 or 11 per cent. have proved fatal.

Massachusetts Medical Society's Prize.—The Committee on Publications offer the sum of *two hundred dollars* as a prize to any one Fellow of the Society who shall give, on or before the 15th of April next, in an essay or report (worthy of a prize), the best and fullest evidence of any original or meritorious *professional work*, done by himself during the two years next preceding said date—in experimental investigations, scientific researches, or clinical observations.

—

Resignation of Prof. Klebs.—Prof. Klebs has resigned his chair of Pathological Anatomy in the Medical Faculty of the University of Prague. He has done so, we understand, because his request for additional space for pursuing his investigations has been refused by his colleagues in the College of Professors. The students, with whom he is so great a favourite, are endeavouring to induce him to recall his resignation, and the Minister of Public Instruction has called for a report on the subject from the Professors' College. Prof. Klebs is in bad health, and is at present at Carlsbad.—*Med. Times and Gaz.*, Aug. 7, 1880.

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Literary Notes.—The autumn has not been prolific of literary announcements. H. K. Lewis, of London, has nearly ready, "Elements of Practical Medicine," by Alfred H. Carter, M.D., Physician to the Queen's Hospital, Birmingham; and Williams and Norgate have just published "Lectures on Digestion," by Dr. C. A. Ewald, of the Royal University of Berlin.

Of new journals we have received the first number of the *Specialist*, a monthly quarto of 14 pages, published by Churchill, of London, and devoted, as its name implies, to the specialties. Mr. Presley Blakiston reprints it in consolidation with his *Intelligencer*, under the editorship of Dr. Charles W. Dulles—whose name is favourably known in medical literature.

The *Rocky Mountain Medical Review* is a monthly of forty pages, the first number of which was issued in September, and is edited by A Wellington Adams, M.D. It hails from Colorado Springs, and its contents, make-up, and mechanical execution, give it an extremely attractive appearance.

An important work on medical jurisprudence, in three volumes, is announced by H. Laup, of Tübingen. It is to be edited by Dr. Maschka, and written by a series of experts, including Drs. Eulenberg, Drogendorff, Oesterlen, Emminghaus, Krafft-Ebing, and other well-known names.

The *British Medical Journal* (Oct. 16), in acknowledging the receipt of the "Subject-Catalogue of the Library of the Surgeon-General's Office," says of it that "it is a perfect marvel of care, accuracy, and completeness. Although Dr. Billings, its accomplished compiler, modestly disclaims for it all pretensions to a complete medical bibliography, yet the known industry with which the agents of the library in London, Paris, Leipzig, Amsterdam, St. Petersburg, and other great book-marts collect books for it, probably makes the catalogue the most complete in the world for medical literature."

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Obituary Record.—Died, at Springfield, Ill., on the 27th of October, Rufus S. Lord, M.D., Surgeon-General of the Illinois National Guard.

The death of Professor Buhl is announced. His studies in pathology, and especially in the pathology of tubercle, have rendered his name well known both at home and abroad.

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To Readers and Correspondents.—The editor will be happy to receive early intelligence of local events of general medical interest, or which it is desirable to bring to the notice of the profession. Local papers containing reports or news items should be marked.

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